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New Ontario Mill Orders Two Paper Machines

Dominion Engineering, Ltd., Awarded Contract to Build Big Newsprint Units for Comeau Bay Plant of Ontario Paper Co.—New 262-Inch Machines, Capable of Running 1,500 Ft. Per Min., Embody Latest Improvements

[FROM OUR REGULAR CORRESPONDENT]

MONTREAL, Que., May 25, 1936—Once more the expansion of Quebec's newsprint capacity is under way, for this week A. A. Schmon, president of the Ontario Paper Company, announced that a contract has been awarded to Dominion Engineering, Ltd., of Montreal, for the construction of two newsprint machines for the new mill his company is building at Comeau Bay on the Manicouagan river, which is in the lower St. Lawrence region. The Manicouagan river runs into the St. Lawrence on the north shore, and is about 750 miles below Quebec, opposite Rimouski.

The paper from this mill will be used by the New York *Daily News*. The contract for the machines, it is understood, entails a matter of over $2,000,000. The machines, which are of the 262-inch type, will embody the most modern improvements. They will be capable of production speeds of 1,500 feet per minute. While they will not be the widest machines in the world, only two, one in Canada and one in England, exceed them in average trim. Some of the features of the new machines have hitherto been used only in the production of fine papers. This has been done so as to make possible the manufacture of the highest grade newsprint at much higher speeds than are now common in the newsprint industry.

Bathurst Control Changes Hands

Share and operating control of Bathurst Power and Paper Company, Ltd., has been purchased by Nesbitt, Thomson & Co., Ltd., of Montreal, and associates. Previously, ownership of the company had rested in Newsprint Bond and Share Company, Ltd., through ownership of majority of the no par value class "B" voting shares as well as a substantial amount of the no par class "A" non-voting shares.

Although the terms of the transactions are not announced, it is known that the new interests have taken over and now own these holdings. It is expected that they will develop the business of the company along special lines.

This event has been anticipated for some time and should have bearing upon the result of the adjourned annual meeting when it reconvenes on May 26.

Bathurst Power and Paper Company, Ltd., has outstanding 400,000 shares of class "A" that are listed on the Montreal Stock Exchange, and 300,000 shares of class "B" that are listed on the Montreal Curb Market. The new development will make possible a wider distribution of the "A" shares in the hands of the investing public.

The present company was formed in February, 1928, as a producer of newsprint paper, sulphate and sulphite pulp. In recent years, it has gradually withdrawn from newsprint, concentrating in the production of kraft liner board, corrugating materials and folding box board. Present productive capacity is 81,000 tons of these materials, through conversion of one newsprint machine and a cylinder machine, leaving one newsprint machine still available. The company holds extensive timber limits in New Brunswick and Quebec, ample to take care of its requirements, it is stated.

The first announcement following the change of control is that H. J. Webb has been appointed vice-president and treasurer of the company. Mr. Webb, who is a chartered accountant, joined the Riordon Company in 1921, and since 1925 had been comptroller of the International Paper Company.

Pocona and Price Brothers

Pocona, Ltd., which was formerly the Aluminum interests, and now owns approximately 96 per cent. of the outstanding bonds of Price Bros. & Co., has by a by-law enacted by its directors, increased the company's capital stock from 1,000 shares without nominal or par value to 1,200,000 shares without nominal or par value. The amount of the capital with which the company will carry on its business as and from the date of confirmation by supplementary letters patent of said by-law is $6,000,000. The supplementary letters patent, according to the notice, bears the date, April 24, 1936.

Consolidated Papers Improves Earnings

A striking gain in operating earnings is shown in the fourth annual report of the Consolidated Paper Corporation Ltd., and its subsidiary companies for the fiscal year ended March 31, 1936. Net operating income for the year under review, available for bond interest and depreciation,

(Continued on page 46)

Kimberly-Clark Corp. to Erect Large Addition

James Leck Construction Co. Awarded Contract for Erection of Five-Story Steel, Concrete and Brick Building—Contracts for Additional Machinery for This Unit Already Placed—Building to be Completed by November 1

[FROM OUR REGULAR CORRESPONDENT]

APPLETON, Wis., May 25, 1936—Contracts have been let by the Kimberly-Clark Corporation to the James Leck Construction Company of Minneapolis, Minn., for the erection of a large addition to its Lake View mill at Neenah, Wis. According to announcement of F. J. Sensenbrenner, president, the building will be of steel, concrete and brick construction, 110 x 130 feet, and will be five stories high. Contracts for additional machinery to be housed in this addition have also been placed. It is expected that the building will be completed and the machinery in operation by or before November 1.

Safety Conference

Plans have been completed for the Sixth Annual Wisconsin River Valley Safety Conference, to be held at Nekoosa, Wis., Thursday, June 4. Franz H. Rosebush, of the Nekoosa-Edwards Paper Company, is the general chairman.

Sectional meetings will open at 9:45 in the morning. J. J. Plzak, personnel director of the Consolidated Water Power and Paper Company, Wisconsin Rapids, Wis., will serve as chairman of the pulp and paper section. E. P. Gleason, chief engineer of the Nekoosa-Edwards Company, will be in charge of the electrical and power section.

Among the speakers at the pulp and paper section will be Clayton Braatz, personnel director of the Marathon Paper Mills Company, Rothschild, Wis. He will discuss the question, "What method of procedure do you find most effective in informing foremen of accident prevention?" Fred W. Braun, safety engineer of the Employers Mutual Liability Company, Wausau, Wis., will present the question, "How do you go about correcting unsafe practices?"

Highlights of the sectional meetings will be summarized by each chairman at a general session at 1:45 in the afternoon, with Mr. Rosebush presiding. General discussions will be led by Mr. Braatz and C. E. Staky, general manager of the D. J. Murray Manufacturing Company, Wausau, Wis. The principal address will be made by Thomas H. Allen, safety engineer of the Hardware Mutual Casualty Company, Stevens Point, Wis.

John E. Alexander, president and general manager of the Nekoosa-Edwards Company, will preside at the closing banquet at 6:00 in the evening as toastmaster. The speaker will be W. C. Knoelk of Madison, Wis., chairman of the Wisconsin Safety Commission.

Several hundred paper mill representatives attended the annual Fox River Valley and Lake Shore Safety Conference at Manitowoc, Wis., Thursday, May 21. With thousands attending, it was one of the largest ever held.

Ernst Mahler, vice-president of the Kimberly-Clark Corporation, Neenah, Wis., gave the principal address at the pulp and paper section, dealing with his company's pioneering in safety, and the methods by which results are achieved. A general discussion took place on safety methods in various mills, and the solution of problems brought up for consideration.

A mammoth safety parade was held in the afternoon. A large warehouse of the White House Milk Company was used for the closing banquet in the evening, attended by 1,400 persons. The speaker was Roger Sherman Hoar, legal counsel for the Bucyrus-Erie Company, Milwaukee, Wis. His message was one of loyalty and teamwork between employer and employee as a means of safety.

H. A. Klemm, safety director of the Wisconsin Industrial Commission, who was one of the speakers, said the attendance topped even the records of the National Safety Council conventions.

Oshkosh, Wis., was chosen as the location for the 1937 conference.

News of the Industry

Application has been made by the Consolidated Water Power and Paper Company, Wisconsin Rapids, Wis., to the Wisconsin Tax Commission for a reassessment of all property values in the city, contending that the 1935 assessment is unequal and discriminatory. A hearing was set for Monday, May 25, to present arguments on both sides of the question.

The Consolidated company's assessment for both 1934 and 1935 was $3,642,075. The company's application contends that the "assessment of real and personal property in the city for the year 1935 has not been made in substantial compliance with the law and is unequal and discriminatory both as between different taxpayers and classes of property," and claims the interests of the public will be promoted by a reassessment.

At a meeting of the city council following the filing of the notice, the officials were generally agreed that a reassessment is needed, and did not instruct the city attorney to contest the application.

Pulpwood shipments cleared through the port at Green Bay, Wis., are estimated at 80,000 cords this season. Movement of the wood already is under way. The Northern Paper Mills, Green Bay, Wis., using its own steamship, the *Inca,* will import about 30,000 cords. The Hoberg Paper and Fibre Company, Green Bay, has contracts for 20,500 cords. An additional 25,000 cords will be shipped in by the Kimberly-Clark Corporation for its mill at Kimberly, Wis. This wood will be unloaded at a new dock being constructed at Green Bay, and will be reshipped by rail. Another 1,500 cords will go to the Little Rapids Pulp Company, Little Rapids, Wis. These shipments will be reloaded on river barges.

Practically all of the wood will be shipped across the Great Lakes from Ontario, Canada, and consists mainly of balsam, spruce and poplar. There will be about 80 cargoes weighing 170,000 tons and valued at $900,000. The Patterson Steamship Company, Fort William, Ontario, will carry all of the wood except that for the Northern Paper Mills.

Thirty-two traffic and shipping department men from fifteen mills attended a meeting of the Wisconsin Paper Group held a meeting for discussion of mutual problems following a dinner at Conway Hotel, Appleton, Wis., last week. They discussed the dated-car pool schedules the organization handles for all Wisconsin mills. P. J. Reimer

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all pioneered and Built by Dilts

First Bandless Beater Roll

First Cast Iron Beater with Incline bottom for quick dumping

First rigid one piece beater stand

First spring cushion lighter stand

First use of alloy steel for fly bars and bedplate

First new type offset roll beater

First (and only) practical keyed bandless beater roll

First iron tub breaker beater batch and continuous type

First effective yielding roll brackets

First siphon disk washers

First bedplate type continuous extractor

First continuous cleaning system for mixed paper and rag stock

First practical high speed refining (Dilts Hydrafiner)

First braced bar all steel breaker roll

First variable pitch propeller vat pump

First double suspension spring bearings for breaker rolls (all steel construction)

— Dilts —

MACHINE WORKS Inc. FULTON, N.Y.

"Your Paper Is Made in Your Beaters"

of the Gilbert Paper Company, Menasha, Wis., chairman of the traffic committee, presided. Other members of the committee are: Clarence Merkle, Menasha Products Company, Menasha, Wis.; Henry Krueger, Fox River Paper Company, Appleton, Wis., and Herman Krueger, Riverside Paper Corporation, Appleton.

The Northeastern Wisconsin Section of the American Chemical Society held its closing meeting of the season at the Institute of Paper Chemistry, Appleton, Wis., last week. The speaker was Dr. R. Norris Shreve of the School of Engineering, Purdue University. His subject was "The American Dye Field."

C. G. Eubank, of the industrial relations department of the Kimberly-Clark Corporation, Neenah, Wis., spoke on "The Problem of Unemployment" at a meeting of the Neenah Rotary Club last week. He pointed out that unemployment is slowly but steadily decreasing. Manufacturers are trying to reduce seasonal unemployment, he said, by sales and market policies designed to obtain a more even rate of orders; a planned program of production and sales; the development of sidelines and fillers for slack seasons, and personnel policies to provide flexible working hours, training, transfer, promotion, etc. Mr. Eubank said the improvement in mechanical processes and production does not create permanent unemployment but brings about rather a transfer of labor from some lines to others.

A. Thomson Reports on Employment

[FROM OUR REGULAR CORRESPONDENT]

DAYTON, Ohio, May 26, 1936—On his return to Hamilton from Washington, where he attended a meeting of the United States Chamber of Commerce, Alexander Thomson, chairman of the Board of the Champion Paper & Fibre Company, and head of the Ohio Chamber of Commerce as well as the Hamilton Chamber, reported that industry already has employed about 6,000,000 workers who previously had been idle because of the depression.

Mr. Thomson is a member of the United States Chamber's special committee and is making a survey of the employment situation throughout the country with the aid of local Chambers of Commerce.

The U. S. committee has suggested that the local committees obtain the present status of employment efforts, and provide definite and specific information on this and also assist wherever possible in lifting the needy from relief to private employment.

The Committee also suggested that the Chamber find out industries able to increase the number of jobs, learn why expansion is not being made and seek to remove any obstacles that may prevent this expansion.

The national committee believes that each commodity knows its own problems best but offers to give any assistance that it can to facilitate the work.

"Business and industry," said Mr. Thomson, "might be compared to a great dam behind which floods of potential orders have been piling up for the years of the depression. In the valley beyond are the millions who have felt and are feeling the depression. Their pent-up desires of these years for the necessities and luxuries which are due Americans, provide the market.

"Let stabilization of governmental policies come and you will see the greatest business activity of history with employment at a greater peak and factories and mills not only turning out the things which they have done heretofore, but the many new things which invention and new processes have developed in the last few years, but for which there was no market."

Albia Box & Paper Co. Prospers

[FROM OUR REGULAR CORRESPONDENT]

TROY, N. Y., May 26, 1936—Among the most prosperous concerns in this section is the Albia Box and Paper Company which has been in existence here for nearly half a century. The concern manufactures all types of set up board. In other words shirt, collar, underwear, brush boxes, etc., are shipped out entirely formed while some grades of creased chip board, used for the manufacture of the cheaper grade of folding boxes, is also produced. It is a continuous service process with three shifts of workers being employed 24 hours daily. About 40 persons are employed in the chip board mill and 30 in the box shop. Additional employees are engaged at peak times. Not alone does the concern supply a local trade but it also ships to customers in various sections of New York, Massachusetts, Vermont, Connecticut, and other New England states.

Officials of the company are William C. Geer, president; Clarence Van Zandt, vice-president; Charles H. Gardner, treasurer, and J. L. Snyder, secretary and general manager. And there are a few employees who are somewhat other than yearlings. Heading the list is James Allen, who has been employed by the concern since its inception 36 years ago. Then there is Edward Miller, box shipper, who has completed 32 years while J. L. Snyder, secretary and general manager, has completed 31 years. Clyde Warren, board shipper; Cleve Hidley, maintenance man; Frank Provost and William Rosecrans, machine tenders, are listed on company records at more than 25 years of service.

Government Paper Bids and Awards

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., May 27, 1936—The R. P. Andrews Paper Company has been awarded the contract for furnishing the Government Priting Office with 41,900 pounds (100,000 sheets) of 21 x 32 419, manila cardboard at 3.63 cents per pound. The Whitaker Paper Company will furnish 10,000 pounds of No. 2 kraft wrapping paper in 39" rolls at 3.6 cents per pound. Bids for both of these items were received on May 15.

Barton, Duer & Koch Paper Company will furnish 5,000 pounds (26,000 sheets) of 27 x 38 sulphite manila paper at 5 cents per pound, bids for which were received on May 18.

The Whitaker Paper Company will also furnish 80,700 pounds of 38 x 48 single coated book paper at 6.35 cents per pound.

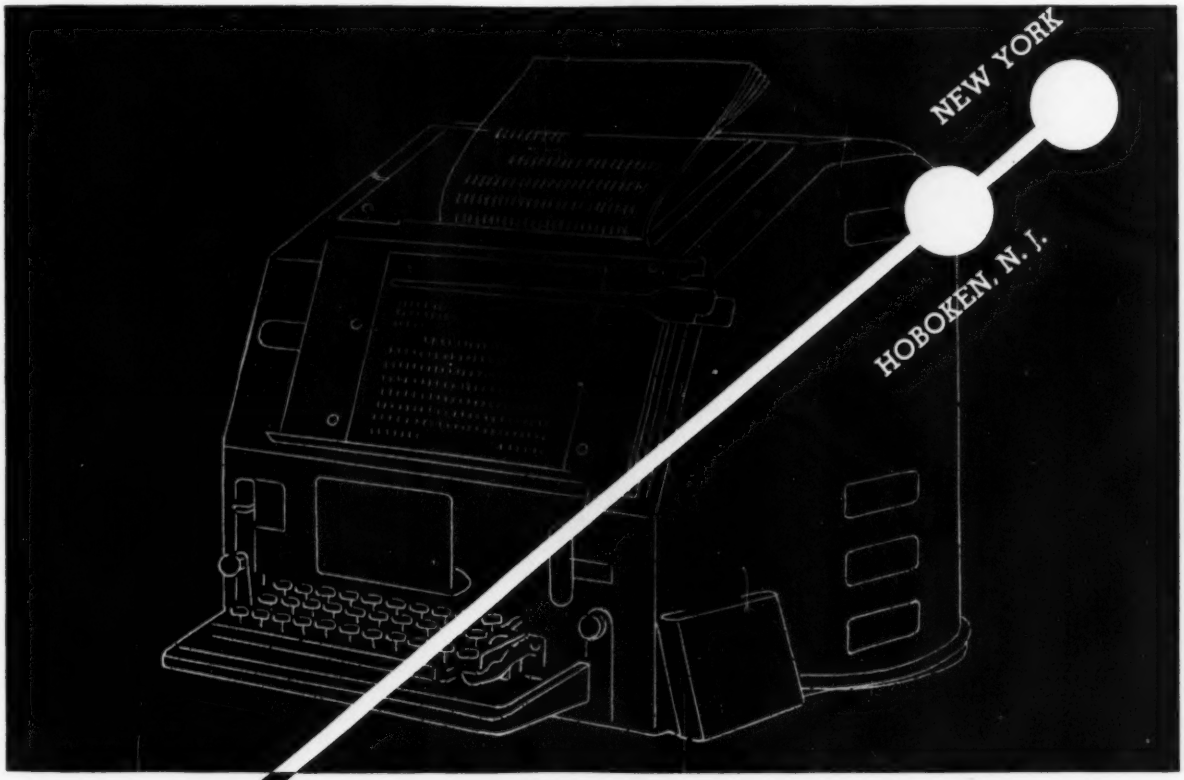
The Whitaker Paper Company has been awarded the contract for furnishing 15,000 pounds (150,000 sheets) of 75 per cent rag, white antique laid book paper at 11.22 cents per pound and Reese & Reese will furnish 8,000 pounds (40,000 sheets) of 22½ x 28½ jute tag board at 7.1 cents per pound. Bids for both of these items were received on May 11.

The Whitaker Paper Company will also furnish 3,000 pounds of 17¾ x 30¼ white recording instrument chart paper at 35 cents per pound, bids for which were received on April 22.

United Paperboard Reports Profit

The United Paperboard Company for the quarter ending March 28, reports net profit of $8,704.03, after depreciation and Federal taxes, equal to 66 cents a share on 13,172 shares of preferred stock.

BELL SYSTEM SURVEY DEVELOPS 4 IMPORTANT OPERATING ECONOMIES FOR AMERICAN COMMERCIAL ALCOHOL CORP.



THE American Commercial Alcohol Corporation recently installed private line teletypewriter service (typing-by-wire) between its New York headquarters, Hoboken warehouse, and Pekin, Illinois, plant as the result of a joint survey by company executives and Bell System representatives.

Now, special order forms and invoices, typed once at any office, are instantly reproduced at all three. All offices can function almost as if they were under the same roof. In addition, these four specific advantages resulted.

1. Order forms were combined, simplified, and the number reduced from five to three. Faster, easier handling and simultaneous preparation at all points virtually ended errors.

2. The multi-copy feature of the service made it possible to cut the number of order-writing operations from eight to three—with a consequent saving of $500 a month.

3. Billing was speeded up by two to four days. Serious customer complaints on delayed invoices were eliminated. Earlier remittances save more than $500 monthly interest charge.

4. Accounts-receivable figures were brought up to the minute, instead of being three or four days late, and the monthly savings made possible by the service more than offset its cost.

★ Experienced Bell System representatives will carefully review your business with you to see whether operating economies or improvements can be effected by modern communication methods. No charge. Call the Business Office of your local telephone company

Chicago Paper Industry Displays Firm Trend

Local Paper Merchants Anticipate Contra-Seasonal Improvement During Summer Months—Prevailing Demand for Practically All Grades of Paper Rather Light—Book and Cover Papers, However, Slightly More Active

[FROM OUR REGULAR CORRESPONDENT]

CHICAGO, Ill., May 25, 1936—Despite continued dullness in virtually every grade, the Chicago paper market gives evidence of a firm and most satisfactory undertone. There is an increasing belief among local merchants that a contra-seasonal improvement in all paper markets will be a feature of the summer months and it is to that end that plans are being made. Meanwhile, demand has fallen off in the expected fashion. Fine papers were little changed during the week with the cheaper grades of bonds showing few inquiries but a steady tone. Kraft papers were firm though quiet. Books and covers were reported as slightly improved over last week though still quiet following the early Spring rush, particularly in book. Groundwood markets were firm though dull. Groundwood executives here expect some genuine improvement based on the greatly bettered market condition. Newsprint was reported in better shape. Waste papers were dull but local offerings were in fair demand as compared to certain Eastern markets where it is reported that waste papers are at an unusual low.

Dill & Collins Exhibit

Approximately 1000 potential buyers of paper attended the Chicago version of the Dill & Collins traveling exhibition given in the Red Room of the Hotel LaSalle on May 21, 22 and 23. Cooperating with W. R. KortKamp, advertising manager of Dill & Collins and with Clifford Pinkham of the local office, were representatives of the James White Paper Company and the Messinger Paper Company, local distributors of the complete line of coated and uncoated papers for all graphic arts uses. These firms extended invitations to their customers and prospective customers in the Chicago area to attend the three day exhibit.

The impressive display of D. & C. products contains thousands of pieces illustrating the many uses of Dill & Collins papers. Included is the complete direct mail and advertising campaign of the Armstrong Cork Company; catalogs; school annuals; books; pamphlets; magazines and other advertising and publication pieces. A feature of the exhibit is a display of "trick" photography used in advertising work and a most unusual collection of photographic art. The four panels of photographs were grouped in the center of the Red Room. "More Business", the house organ of Dill & Collins, also served as the center of a number of interesting displays.

The traveling exhibit is to be "on the road" a total of ten weeks, appearing in about twenty cities and is expected to draw an average daily attendance of about 250 advertising and printing executives. It will appear next in Minneapolis and St. Paul and will then head eastward again. The exhibit is open from noon until 9 p.m. and those in charge state that the greatest volume of attendance comes during the evening hours—a real tribute to the drawing power of the exhibit itself.

News of the Industry

The Stephens-Adamson Company, Aurora, Ill., manufacturers, has recently issued a comprehensive catalog illustrating the new conveyor-elevator for handling bulk materials in paper manufacturing plants. The catalog, number 42, contains a number of illustrations of installations and includes drawings of the actual set-up of the conveyor-elevator itself.

The Chicago offices of the Standard Oil Company of Indiana have been giving a good deal of attention to the merchandising of Stanoil, a new lubricating oil described in recent pamphlets. Stanoil is credited with providing a real simplification of the lubricating problem and procedure. It comes in six grades.

The Heco Envelope Company, Chicago, is doing its part in increasing the quality of return envelopes by utilizing a recent mailing to emphasize the practicability of tinted paper return envelopes as compared to the "old Manila return envelope". The use of bright green or red papers is credited in a mailing test as being far more resultful than the use of the more conservative style. "Alert advertising men", says the copy, "have found that when good return envelopes are used more of them come back".

The Crane Company, having made a number of personnel changes within the past few months, has added another with the announcement that G. L. Erwin, formerly general sales manager of Kearney & Trecker, Milwaukee manufacturers of machine tools, is to become assistant to P. R. Mork, vice president in charge of sales for the Chicago manufacturers. Mr. Erwin, it is reported, will conduct intensive market research work for the Crane Company as an added incentive to the development of Crane sales.

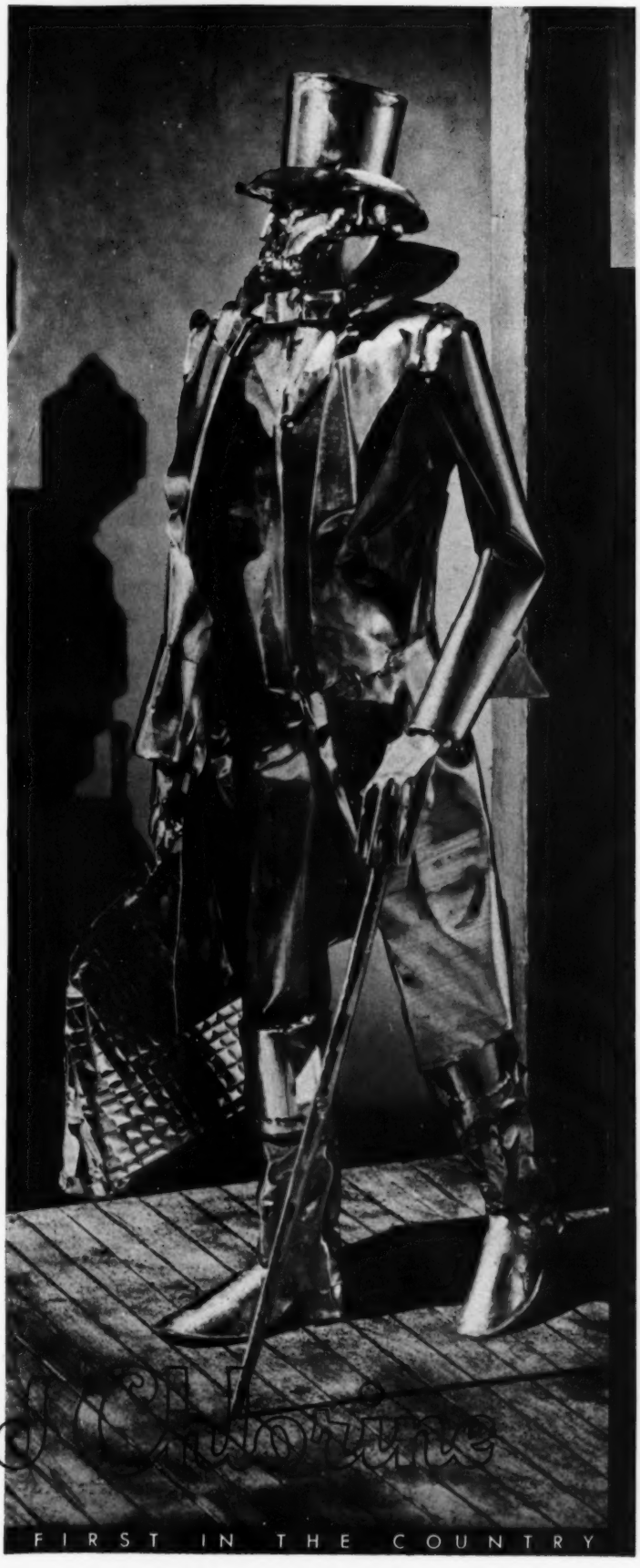
Unitair compressors, described as a new feature in compressor design, are being featured in the latest bulletin from the Sullivan Machinery Company, Chicago. The direct mail piece is well illustrated with examples of the way in which the new compressor performs for industry.

H. R. Knott, Western representative of the Eastern Manufacturing Company, leaves May 24 for a two weeks' business trip to the Pacific Coast. Going first to Los Angeles, Mr. Knott expects to contact representatives of the industry in San Francisco, Portland, Spokane, Seattle and other coast cities.

Recent meetings of the Southern Ports Foreign Freight Committee, held in Chicago, designated approval of rate changes on woodpulp, carload minimum weight of 80,000 pounds, from Gulf and South Atlantic Ports. A rate of 23 cents is to be established to Indianapolis, Rockport, Mount Vernon, Lafayette, Evansville, Terre Haute and Vincennes. Exemption from emergency charge is provided.

The Midwest Division of the Salesmen's Association of the Paper Industry held its initial golf outing of the year at the Park Ridge Country Club on Friday, May 22. Some of the golfers were expected to assemble in the morning for practice rounds and the entire cast was set to enjoy a luncheon, an afternoon of "prize money" play and the usual dinner and song fest in the evening. Burt Fisher, Bergstrom Paper Company, chairman of the golf programs for the summer of 1936, was looking for approximately seventy members and guests. Good weather was expected to swell the crowd considerably.

SCULPTURED IN TIN
BY L. L. BALCOM



TO the pioneer railroad builders of the last century goes the credit for opening up rich, new territories in the West. To the pioneer chemical companies of today goes the credit for opening up many rich, new fields of activity for industry. Among these companies is EBG—first to produce Liquid Chlorine in the U. S. A. New frontiers... new pioneers! Yet the old confident spirit of the empire builders lives on. When you need Liquid Chlorine—or experienced counsel regarding its use—turn to EBG, the pioneer—first in the country!

ELECTRO BLEACHING GAS COMPANY
MAIN OFFICE: 9 EAST 41st STREET, NEW YORK, N. Y.
PLANT: NIAGARA FALLS, N. Y.

EBG Liquid Chlorine

Demand for Paper Moderately Active In Boston

Bonus Distribution Expected to Counteract Usual Downward Seasonal Trend —Steady Improvement Experienced In Wrapping Paper Market — Box Board Situation Reported Little Changed—Paper Stock Continues Listless

[FROM OUR REGULAR CORRESPONDENT]

BOSTON, Mass., May 25, 1936—The volume of business transacted by paper wholesalers in the Boston market last week was fair, particularly for the time of year. Retail trade is expected to be good with the bonus distribution expected next month, which will tend to counteract the usual downward seasonal trend, to some extent, at least. Wrapping paper is showing a steady improvement over last year, certainly in some quarters. Fancy papers, moved moderately well. There was not much improvement in the box board market.

Paper Stock Continues Quiet

In paper stock there was a continued quietness, on the whole, although Haverhill advanced the price on mixed papers $1 a ton. A few other grades of old papers showed declines. Generally speaking, the market was slow, particularly on the low grades. Mills stayed out of the market on foreign stock, and were inclined to bear the market on domestic stock in most cases. On the high grades, manufacturers tended to question the prices a little.

In old papers, mixed papers advanced to .20 @ .25 from 17½ @ .20, but No. 1 kraft declined to 1.10 @ 1.15 from 1.15 @ 1.20 and corrugated boxes to .35 @ .37½ from .37½ @ .42½. Domestic manila rope declined to 2.25 @ 2.35 from 2.35 @ 2.45, foreign gunny No. 1 to 1.90 @ 2.00 from 2.00 @ 2.10, domestic gunny No. 1 to 1.80 @ 1.90 from 1.85 @ 1.95, heavy wool tares to 2.10 @ 2.15 from 2.25 @ 2.35. Heavy baling bagging advanced to 1.95 @ 2.00 from 1.85 @ 1.95. In new domestic rags, silesias No. 1 went off to .05 @ .05½ from .05½ @ .06. Old domestic rags and foreign rags remained at the same levels.

Paper Merchants Outing

The regular meeting and outing of the New England Paper Merchants Association, through the courtesy and invitation of the Worcester members, was held at the Worcester Country Club, with an attendance of 29.

In the business meeting, with President Robert M. Stone in the chair, the growing tendency of substituting lower grades of printing papers in place of regular lines was discussed and condemned. The sale of groundwood content papers for records requiring any degree of permanency is obviously foolish and dangerous.

Vice-President Winter was requested to appoint a committee of three to make a survey and study of the cost of delivery of fine papers under the present set-up and to make recommendations at the next meeting.

Reports on both fine and wrapping paper conditions in New Haven, Hartford, Springfield, Providence, Worcester and Boston all showed an improvement in volume.

An unusually good luncheon was served. Rain interrupted the afternoon sports, but those present were glad they came.

News of the Industry

A novelty for which there will undoubtedly be a popular demand is the new Jiffy Rainchek Umbrella, being handled by the D. F. Munroe Company. The umbrella, made of a moisture treated kraft paper, is manufactured by the Jiffy Pad and Excelsior Company, New York and Boston. The concern has a factory in Charlestown. The umbrella has a diameter of 33 inches and is made both in black and in blue. Kept on hand at the home or office, it will be handy in case of a sudden shower. The retail price is very reasonable.

John Carter & Co., Inc., have brought out Queen Mary Weddings, a new line in a brilliant white, an ideal finish for all printing and engraving requirements, of a quality that assures excellent finished results, and priced for today's active competition. The line is made in two sizes, "Marjorie Size," 7¼ x 10¼, and "Evelyn Size," 5⅞ x 8⅞, sold in single cabinets and cartons of ten cabinets. All cabinets contain 52 sheets, 52 tissues, 50 inside envelopes and 50 outside envelopes. Samples of the Marjorie Size, containing a diagram of the Evelyn Size have been issued. Order blanks are on Herald Plain Cards, Glendale Vellum, of apple green color.

The John Carter company is to distribute a line of Christmas greeting cards for 1936, including box assortments and specialties, of which samples and price lists will be available early in the season. The announcement is printed on Glendale Vellum, 5 Baronial Paneled.

Carter, Rice & Co., Corp., are showing in one of their display windows an attractive exhibit of their Nationwide papers. Nationwide Bond, Nonstop Mimeograph, Compass Bond, and Nationwide Text are the lines featured.

The annual outing of Carter, Rice & Co., Corp., is to be held June 6 at the Stow Country Club, Stow, Mass. The Boston, Providence, Worcester and Springfield houses will be closed for business that day. The program includes field sports, dancing, swimming, luncheon and dinner.

The Davis Paper Company, West Hopkinton, N. H., expect to shut down the plant about the middle of June in order to install new penstocks and water-wheels. The plant will probably be closed about six weeks.

Kendall Wyman, in charge of the card board division of the Champion Coated Paper Company, Hamilton, Ohio, in company with the George Stanbridge, Boston representative of the concern, called on Boston jobbers last week.

To Manage Springfield Glazed Paper Corp.

HOLYOKE, Mass., May 26, 1936—The appointment of Jesse Linton as vice-president and general manager of Springfield Glazed Paper Corporation of West Springfield, has been announced by Louis Schulman, owner of various paper interests, from his New York office.

Mr. Linton was previously for many years with Pawtucket (R. I.) Glazed Paper Company, which was acquired by the American Coated Paper Company, that city. In his new position, Mr. Linton is succeeding Eugene E. Giard, who became president in March when Mr. Schulman acquired the company. Mr. Schulman is now president. Vice-president Talbot is no longer identified with the concern, President Schulman said.

George Twigg, formerly with Kupfer Brothers Company, is now associated with Springfield's New York office with Edward Ruff.

Philadelphia Paper Business Outlook Promising

Moderate Expansion of Demand for Various Grades of Paper During Summer Months Anticipated—National Paper Trade Association Launches Program of Widespread Scope to Improve Methods and Eliminate Waste

[FROM OUR REGULAR CORRESPONDENT]

PHILADELPHIA, Pa., May 25, 1936—The business outlook in the paper trade here is for moderate expansion and despite seasonal influences is expected to keep up at a good rate for the summer.

Association Activities

A meeting of the Fine Paper Division of the Paper Trade Association of Philadelphia will be held on Thursday of this week at 12:30 in the Down Town Club. "Merchandising" will be discussed by William A. Hentz, manager of sales for Thos. W. Price Company.

The regular bi-monthly meeting of the Wrapping Paper Division will be held at the Adelphia Hotel on Thursday evening of this week. T. H. B. Smythe will preside.

With the appointment of John H. Brewer, general manager of Storrs & Bement Company, Boston, as general chairman of the Fine Paper Merchandising Committee, the National Paper Trade Association is sanguine of accomplishing a very comprehensive program of widespread scope. Mr. Brewer is of opinion that the association in launching this program has a chance to glean from the experience of its members, data on six broad subjects related to paper merchandising costs, which will provide the average merchant with means of improving his methods and eliminating waste, and with this in mind it is hoped that something can be learned on the following subjects: Advertising Coordination, Sampling, Inventory, Markets, Graphic Arts Processes and Salesmen.

General chairman Brewer has made the following appointments with their respective assignments: Advertising and Coordination, to Morris Schlosser of the Schlosser Paper Company, New York, and to George A. Mueller of the Midland Paper Company, Chicago; Sampling, to V. E. Hecht of the Zellerbach Paper Company, San Francisco, and L. V. Milnix of the Carpenter Paper Company, of Grand Rapids; Inventory, to J. H. Brewer of Storrs & Bement Company, Boston, and N. K. Woodward of Midwestern Paper Company, of Kansas City; Markets, to T. G. Price of Barton, Duer & Koch of Baltimore, and B. E. Reeves of Alling & Cory Company, Rochester; Graphic Arts Processes to A. N. Seyler of the Cleveland Paper Company, Cleveland, and G. E. Caskie of the Caskie Paper Company, of Lynchburg, Va.; Salesmen, to Wm. A. Hentz, Sales Manager of The Thomas W. Price Company, Philadelphia, and J. L. Wells of Sloan Paper Company, Atlanta. Wm. A. Hentz has been appointed to represent the (Phila.) Trading Area, and the subject of "Salesmen" was assigned to him by the National Paper Trade Committee.

Developing of Paper Salesmen

In recent years the developing of salesmen for the specialized business of marketing papers has become an increasingly important subject. From questionnaires distributed among merchants it is hoped to develop a comprehensive and standard method in the training and handling of salesmen; analyzing territory and its value to the merchant; and a method to combat seasonal sales slumps. Among other important questions to be considered will be the advantages and disadvantages of sales meetings and their frequency, together with the subject of the ownership of cars for the use of salesmen, and insurance liability on such cars. The material developed from the initial suggestions of individual merchants will be of vital interest to paper merchants throughout the country when the final report is published.

In connection with the Salesmen study groups here in Philadelphia, Mr. Hentz hopes to develop concrete information that will be of universal interest to the paper industry, and to that end has been issuing questionnaires periodically from the headquarters of the Paper Trade Association. Mr. Hentz states the importance of cooperation cannot be too strongly stressed, and inasmuch as replies have been received from less than 50 per cent. of those to whom these questionnaires have been mailed, and in the event that some houses have mislaid the memoranda there is published herewith the entire list with the hope that the import of this campaign will be recognized by all those who have thus far failed to send in their replies:

1—What can you suggest as an efficient way of developing salesmen?
2—What do you consider the fairest method of determining salesmen's compensation?
3—What equipment should salesmen have and use?
4—Are you in favor of sales figures being given to salesmen, and if so, how comprehensive should they be?
5—Should salesmen be entitled to copy of every billing?
6—Do you consider it advisable to cost orders and give salesmen gross profit figures?
7—Do you think it wise for a salesman to have cost figures in general?
8—Do you believe salesmen should be given privilege to make own selling prices, and under what circumstances?
9—Do you permit your salesmen to use their discretion in meeting unfair competition, or are they instructed to report such breaches to the house?
10—Do you require salesmen to make out daily reports, if not Daily, how often?
11—Do you insist upon maintenance of trade customs by your salesmen?
12—How do you regulate salesmen's expense accounts? What items are included?
13—Have you an established procedure for the continued education of your sales force?
14—What is your opinion of sales meetings, and if you have them, how are they conducted?
15—Have you a plan to combat seasonal sales slumps?
16—What methods do you adopt with older salesmen when their efficiency begins to ebb?
17—How do you analyze out of town territory?
18—What is your policy on freight allowances to customers?
19—What is your attitude on reverse phone calls? Do you make any exceptions?
20—Do you cover your salesmen's cars with Automobile Liability Insurance or do you leave that in the salesmen's hands?
21—Are Salesmen's cars owned personally or by the company?

(Continued on page 47)

Makes Paper Awards for U. S. Printing Office

Congressional Committee on Printing Lets Contracts for Paper Supplies for the Six Months Beginning July 1—Awards Aggregate in Value $2,458,-617.74 Making Estimated Saving of $2,242.77 Compared With Last Prices

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., May 25, 1936—Awards were made today for a six months' supply of paper for the use of the Government Printing Office effective July 1, next, by the Joint Congressional Committee on Printing. The bids were opened on May 18.

Awards were made on all but four items. One of these, No. 198, facing stereo tissue, no bids were received and the other three items were for small quantities of paper. The award for No. 325, U. S. postal card bristol was divided equally at the same price between the Whitaker Paper Company and the R. P. Andrews Paper Company.

There were tie bids in only 23 items out of 179 while at the last opening there were tie bids on 69 items.

Awards made had a total value of $2,458,617.74 while at the price of the bids this time compared with the price at the last opening the committee estimated a saving of $2,242.77.

The awards were as follows:

Newsprint

No. 1—750,000 lbs., 24x36—64; rolls, 24, 36, and 48 ins. wide (3-inch fiber cores, with metal ends).

Paper Corp. of U. S. 2.075c

Machine-Finish Book

No. 3—400,000 lbs., 25x38—70; flat, cut 24x32, 28x38 and 31¼x45½ ins.

John F. Post, Inc. 5.60c

No. 4—400,000 lbs., 25x38—70; flat, cut 24x38 and 38x48 ins.

Thos. Barrett & Son 5.57c

No. 5—400,000 lbs., 25x38—70; flat, cut 24x38 and 38x48 ins.

Whitaker Paper Co. 5.60c

No. 6—250,000 lbs., 25x38—70; rolls, 18, 21, 23, and 28½ ins. wide (3-inch iron cores).

Paper Corp. of U. S. 5.07c

No. 7—500,000 lbs., 25x38—70; rolls, 19 and 38 ins. wide (3-inch iron cores).

Perkins Goodwin Co. 5.07c

No. 8—500,000 lbs., 25x38—70; rolls, 19 and 38 ins. wide (3-inch iron cores).

Thos. Barrett & Son 5.03c

No. 9—250,000 lbs., 25x38—70; rolls, 24, 36 and 48 ins. wide (3-inch iron cores).

Thos. Barrett & Son 5.03c

No. 10—250,000 lbs., 25x38—80; rolls, 32 ins. wide (3-inch iron cores).

Thos. Barrett & Son 5.06c

No. 11—400,000 lbs., 25x38—80; flat, cut 24x38, 33¼x64, and 38x48 ins.

Thos. Barrett & Son 5.32c

No. 12—400,000 lbs., 25x38—100; flat, cut 22¼x32¼, 24x38, 24¼x36¼, 32x42, 38x48 and 41x52 ins.

Thos. Barrett & Son 5.06c

No. 13—10,000 lbs., 25x38—120 and 140; flat, cut 29x41 and 38x48 ins. Min. order 5,000 lbs.

Thos. Barrett & Son 5.06c

No. 14—20,000 lbs., blue and salmon, 25x38—70 and 100; flat, cut 25x38 and 38x48 ins. Min. order, one color, 5,000 lbs.

R. P. Andrews Paper Co..... 5.86c [2]
Barton, Duer & Koch Paper Co..... 6.40c [1]

[1] 70 lb.
[2] 100 lb.

Machine-Finish Book End Paper

No. 15—40,000 lbs., flat, 25x38—160; the grain to run the 38-inch way.

Dill & Collins, Inc. 5.58c

Offset Book

No. 16—250,000 lbs., 25x38—120; flat, cut 24x38, 26x32, and 38x48 ins.; grain as ordered. Min. order 5,000 lbs.

Thos. Barrett & Son 5.69c

Antique Book

No. 17—100,000 lbs., 25x38—100 and 120; flat, cut 25x38, 33x43, and 38x50 ins.

Thos. Barrett & Son 5.31c

Lightweight Machine-Finish Book

No. 18—100,000 lbs., 25x38—60; flat, cut 32x48 and 38x48 ins.

Paper Corp. of U. S. 6.11c

50 Per Cent Rag Lightweight High Machine-Finish Book

No. 19—20,000 lbs., 25x38—60; flat, cut 32x48 and 38x48 ins.

R. P. Andrews Paper Co. 11.20c

50 Per Cent Rag Machine-Finish Book

No. 20—50,000 lbs., 25x38—80; flat, cut 32x48 and 38x48 ins.

Aetna Paper Co. 8.92c

No. 21—50,000 lbs., 25x38—80; flat, cut 22¾x31½, 29x41 and 31½x45½ ins.

Aetna Paper Co. 8.92c

No. 22—50,000 lbs., 25x38—90; flat, cut any size, min. width 24 ins., max. width 42 ins.

Whitaker Paper Co. 8.84c

72 Per Cent Rag Laid Antique Book

No. 23—10,000 lbs., 25x38—140; flat, cut 24x38 and 29x41 ins.; the laid marks to run the 24-inch direction of the sheet; the grain and chain marks to run lengthwise of the sheet.

Whitaker Paper Co. 11.11c

100 Per Cent Rag Machine-Finish Book

No. 24—5,000 lbs., 25x38—90; flat, cut 24x38 and 38x48 ins.; the grain to run lengthwise of the sheet. Min. order 5,000 lbs.

R. P. Andrews Paper Co. 15.65c

No. 25—20,000 lbs., 25x38—140; flat, cut 24x38 and 38x48 ins.; the grain to run lengthwise of the sheet.

R. P. Andrews Paper Co. 15.65c

Supercalendered Book

No. 26—40,000 lbs., 25x38—90; flat, cut 32x48 ins. Min. order 10,000 lbs.

Barton, Duer & Koch Paper Co. 5.60c

No. 27—200,000 lbs., 25x38—90; flat, cut 31¼x45½ ins.

Paper Corp. of U. S. 5.60c

No. 28—500,000 lbs., 25x38—90; flat, cut 24x38 and 38x48 ins.

R. P. Andrews Paper Co. 5.60c

No. 29—100,000 lbs., 25x38—90; rolls, 38 ins. wide (3-inch iron cores).

Stanford Paper Co. 5.09c

No. 30—100,000 lbs., 25x38—90; rolls, 28½ and 38 ins. wide (3-inch iron cores).

Perkins Goodwin Co. 5.09c

No. 31—10,000 lbs., 25x38—90 and 100; flat, cut any size, min. width 24 ins., max. width 42 ins. Min. order, one weight, 10,000 lbs.

Barton, Duer & Koch Paper Co. 5.60c

50 Per Cent Rag Supercalendered Book

No. 33—10,000 lbs., 25x38—90; flat, cut 32x48 ins. Min. order 10,000 lbs.

Whitaker Paper Co. 9.90c

Halftone Book

No. 34—80,000 lbs., 25x38—140; flat, cut 24x38 and 38x48 ins.

Whitaker Paper Co. 5.82c

Single-Coated Book

No. 35—250,000 lbs., 25x38—140; flat, cut 29x41, 38x48 and 41x42 ins.; the grain to run lengthwise of the sheet.

Thos. Barrett & Son 6.66c

Double-Coated Book

No. 36—60,000 lbs., 25x38—140 and 160; flat, cut 24x32, 24x38 and 38x48 ins.; the grain to run lengthwise of the sheet.

Thos. Barrett & Son 7.63c

50 Per Cent Rag Double-Coated Book

No. 37—30,000 lbs., 25x38—140 and 160; flat, cut 24x32, 24x38, 32x42, 38x48 and

41x52 ins.; the grain to run lengthwise of the sheet.

R. P. Andrews Paper Co. 12.47c

50 Per Cent Machine-Finish Lithograph

No. 40—20,000 lbs., 25x38—160; flat, cut 26x38 ins.; the grain to run lengthwise of the sheet.

Aetna Paper Co. 8.92c

Mimeograph, White and Colored

No. 43—1,500,000 lbs., white, Nos. 40 and 48; flat, cut 24½x30½, 24½x32, 24½x38, 26x42½ and 28½x34½ ins.; the grain to run lengthwise of the sheet.

Cauthorne Paper Co., Inc. 4.81c

No. 44—350,000 lbs., blue, buff, green, pink and yellow, No. 40; flat, cut 24½x30½, 24½x32, 24½x38, and 26x42½ ins.; the grain to run lengthwise of the sheet. Min. order, one color, 10,000 lbs.

Old Dominion Paper Co. 5.6698c

25 Per Cent Rag Mimeograph

No. 47—2,000,000 lbs., Nos. 40 and 48; flat, cut 24½x30½, 24½x32, 24½x38, 26x42½, and 28½x34½ ins.; the grain to run lengthwise of the sheet.

Aetna Paper Co. 5.97c

Blue U S M O Safety Writing

No. 51—300,000 lbs., No. 32; rolls, 11 and 22 ins. wide, 24 ins. in diameter (3-inch iron cores).

R. P. Andrews Paper Co. 8.81c

U S M O Writing, White and Blue

No. 52—8,000 lbs., No. 32; rolls, 8½ ins. wide, 24 ins. in diameter (3-inch iron cores). Min. order, either color, 4,000 lbs.

R. P. Andrews Paper Co. ..... 6.06c[1] 7.03c[2]

[1] White. [2] Blue.

Safety Writing, Colored

No. 53—5,000 lbs., blue, gray, green, pink, salmon and yellow, No. 40; flat, cut 17x28, 21x32, and 22x34 ins. Min. order, one color, 2,000 lbs.

Mathers-Lamm Paper Co. 10.12c

Sulphite Writing, White and Colored

No. 55—2,000,000 lbs., white, No. 32; flat, cut any size, min. width 21 ins., max. width 34 ins.

Virginia Paper Co. 5.43c

No. 56—2,500,000 lbs., white, Nos. 40 and 48; flat, cut any size, min. width 21 ins., max. width 34 ins.

Virginia Paper Co. 5.43c

No. 57—50,000 lbs., white, No. 26; rolls, min. width 16 ins., max. width 38 ins. (3-inch iron cores).

Virginia Paper Co. 6.17c

No. 58—300,000 lbs., white, No. 32; rolls, min. width 16 ins., max. width 38 ins. (3-inch iron cores).

Virginia Paper Co. 4.88c

No. 59—100,000 lbs., white, Nos. 40 and 48; rolls, min. width 16 ins., max. width 38 ins. (3-inch iron cores).

Virginia Paper Co. 4.88c

No. 60—10,000 lbs., blue, buff, cherry, green, pink, salmon and yellow, No. 26; flat, cut any size, min. width 21 ins., max. width 34 ins. Min. order, one color, 5,000 lbs.

Virginia Paper Co. 7.69c

No. 61—2,500,000 lbs., blue, buff, cherry, green, pink, salmon and yellow, Nos. 32 and 40; flat, cut any size, min. width 21 ins., max. width 34 ins. Min. order, one color, 10,000 lbs.

Virginia Paper Co. 6.38c

100 Per Cent Rag White Writing

No. 63—2,500 lbs., No. 56; flat, cut 21x32 ins. Min. order 2,500 lbs.

Old Dominion Paper Co. 21.21c

Lithograph-Finish Map

No. 64—10,000 lbs., Nos. 32 and 40; flat, cut 24x38, 30x40, 32x48, 36x52, and 38x48 ins. Min. order, one substance, 5,000 lbs.

R. P. Andrews Paper Co. 5.57c

50 Per Cent Rag Lithograph-Finish Map

No. 65—80,000 lbs., Nos. 40, 48 and 56; flat, cut any size, min. width 22 ins., max. width 48 ins.; the grain to run lengthwise of the sheet.

Whiting Paper Co. 9.75c

75 Per Cent Rag Lithograph-Finish Map

No. 66—80,000 lbs., Nos. 32 and 40; flat, cut any size, min. width 24 ins., max. width 48 ins.; the grain to run lengthwise of the sheet.

Barton, Duer & Koch Paper Co. 13.37c

No. 67—20,000 lbs., Nos. 48 and 56; flat, cut any size, min. width 30 ins., max. width 48 ins.; the grain to run lengthwise of the sheet. Min. order, one substance, 5,000 lbs.

Barton, Duer & Koch Paper Co. 13.37c

100 Per Cent Rag White Chart, Lithograph-Finish

No. 69—80,000 lbs., No. 96; flat, cut any size, min. width 22 ins., max. width 46 ins.; 4-inch band around each 500 sheets; the grain to run lengthwise of the sheet unless otherwise specified.

R. P. Andrews Paper Co. 17.21c

Sulphite Manifold, White and Colored

No. 70—150,000 lbs., white, No. 18, flat, cut 21x32, 22x34, and 28x34 ins.; the grain to run the 21-inch way on the 21x32-inch size.

Bermingham & Prosser Co. 7.05c

No. 71—50,000 lbs., blue, buff, cherry, green, pink, salmon and yellow, No. 18; flat, cut 21x32, 22x34 and 28x34 ins.; the grain to run the 21-inch way on the 21x32-inch size. Min. order, one color, 5,000 lbs.

Bermingham & Prosser Co. 8.05c

50 Per Cent Rag Manifold, White and Colored

No. 73—50,000 lbs., white, No. 14; flat, cut 21x32, 22x34, 28x34 and 38x48 ins.; the grain to run the 21-inch way on the 21x32-inch size. Min. order, 5,000 lbs.

Barton, Duer & Koch Paper Co. 16.80c

No. 74—400,000 lbs., white, No. 18; flat, cut 21x32, 22x34, 24x38 and 28x34 ins.; the grain to run the 21-inch way on the 21x32-inch size.

Lee Paper Co. 12.76c

No. 75—20,000 lbs., blue, buff, cherry, green, pink, salmon and yellow, No. 14; flat, cut 21x32, 22x34, and 28x34 ins.; the grain to run the 21-inch way on the 21x32-inch size. Min. order, one color, 3,000 lbs.

Barton, Duer & Koch Paper Co. 20.45c

No. 76—160,000 lbs., blue, buff, cherry, green, pink, salmon and yellow, No. 18; flat, cut 21x32, 22x34, 24x38 and 28x34 ins.; the grain to run the 21-inch way on the 21x32-inch size. Min. order, one color, 5,000 lbs.

Lee Paper Co. 14.76c

100 Per Cent Rag Manifold, White and Colored

No. 78—5,000 lbs., white, No. 14; flat, cut 17x28, 19x24, 21x32 and 22x34 ins.; the grain to run the 21-inch way on the 21x32-inch size. Min. order 5,000 lbs.

R. P. Andrews Paper Co. 29.97c

No. 79—25,000 lbs., white, No. 18; flat, cut 17x28, 19x24, 21x32 and 22x34 ins.; the grain to run the 21-inch way on the 21x32-inch size. Min. order 5,000 lbs.

R. P. Andrews Paper Co. 25.97c

50 Per Cent Rag White Glazed Manifold

No. 83—150,000 lbs., No. 16; flat, cut 19x24 and 21x32 ins.; the grain to run the 21-inch way on the 21x32-inch size. Min. order 20,000 lbs.

Barton, Duer & Koch Paper Co. 16.15c

Sulphite Bond, White and Colored

No. 101—5,000 lbs., white, No. 26; flat, cut any size, min. width 21 ins., max. width 34 ins. Min. order 5,000 lbs.

Virginia Paper Co. 7.33c

No. 102—1,000,000 lbs., white, Nos. 32 and 40; flat, cut any size, min. width 21 ins., max. width 34 ins.

Virginia Paper Co. 5.94c

No. 103—5,000 lbs., white, No. 48; flat, cut any size, min. width 21 ins., max. width 34 ins. Min. order 5,000 lbs.

Virginia Paper Co. 5.94c

No. 104—10,000 lbs., blue, buff, cherry, green, pink, salmon and yellow, Nos. 32 and 40; flat, cut any size, min. width 21 ins., max. width 34 ins. Min. order, one substance, one color, 2,000 lbs.

Virginia Paper Co. 6.86c

25 Per Cent Rag Bond, White and Colored

No. 109—350,000 lbs., white, No. 26; flat, cut any size, min. width 21 ins., max. width 34 ins.

Whiting Paper Co. 8.599c

No. 110—600,000 lbs., white, No. 32; flat, cut any size, min. width 21 ins., max. width 34 ins.

Aetna Paper Co. 8.12c

No. 111—1,000,000 lbs., white, No. 40; flat, cut any size, min. width 21 ins., max. width 34 ins.

Aetna Paper Co. 7.47c

No. 112—1,000,000 lbs., white, No. 40; flat, cut any size, min. width 21 ins., max. width 34 ins.

Aetna Paper Co. 7.47c

No. 113—500,000 lbs., white, No. 48; flat, cut any size, min. width 21 ins., max width 34 ins.

Aetna Paper Co. 7.72c

No. 114—700,000 lbs., blue, buff, cherry, green, pink, salmon and yellow, No. 26; flat, cut any size, min. width 21 ins., max. width 34 ins. Min. order, one color, 5,000 lbs.

Whiting Paper Co. 8.599c

No. 115—600,000 lbs., blue, buff, cherry, green, pink, salmon and yellow, No. 32; flat, cut any size, min. width 21 ins., max. width 34 ins.

Aetna Paper Co. 8.22c

No. 116—450,000 lbs., blue, buff, cherry, green, pink, salmon and yellow, No. 40; flat, cut any size, min. width 21 ins., max. width 34 ins.

Aetna Paper Co..... 7.92c

No. 117—130,000 lbs., blue, buff, cherry, green, pink, salmon and yellow, No. 48; flat, cut any size, min. width 21 ins., max. width 34 ins.

Aetna Paper Co..... 8.22c

50 Per Cent Rag Bond, White and Colored

No. 120—50,000 lbs., white, No. 26; flat, cut any size, min. width 21 ins., max. width 34 ins.

Whiting Paper Co..... 9.50c

No. 121—1,000,000 lbs., white, Nos. 32 and 40; flat, cut any size, min. width 21 ins., max. width 34 ins.

Aetna Paper Co..... 9.12c

No. 122—250,000 lbs., white, No. 48; flat, cut any size, min. width 21 ins., max. width 34 ins.

Aetna Paper Co..... 9.12c

No. 123—60,000 lbs., blue, buff, cherry, green, pink, salmon and yellow, Nos. 26, 32 and 40; flat, cut any size, min. width 21 ins., max. width 34 ins. Min. order, one color, one substance, 2,500 lbs.

Whiting Paper Co..... 10.25 [1] 10.00 [2]

[1] No. 26. [2] Nos. 32 and 40.

75 Per Cent Rag White Bond

No. 125—2,500 lbs., No. 26; flat, cut any size, min. width 21 ins., max. width 32 ins. Min. order 2,500 lbs.

Barton, Duer & Koch Paper Co..... 16.58c

No. 126—2,500 lbs., Nos. 32, 40 and 48; flat, cut any size, min. width 21 ins., max. width 32 ins. Min. order, one substance, 2,500 lbs.

R. P. Andrews Paper Co..... 16.89c

100 Per Cent Rag White Bond

No. 128—4,000 lbs., Nos. 32 and 40; flat, cut any size, min. width 16 ins., max. width 32 ins. Min. order, one substance, 2,000 lbs.

Barton, Duer & Koch Paper Co..... 20.80c

No. 129—5,000 lbs., No. 48; flat, cut any size, min. width 16 ins., max. width 32 ins. Min. order 2,000 lbs.

Barton, Duer & Koch Paper Co..... 20.80c

100 Per Cent Rag Declaration Bond

No. 140—3,000 lbs., Nos. 32 and 40; flat, cut 17x22 and 22x25½ ins. Min. order, one substance, 3,000 lbs.

Barton, Duer & Koch Paper Co..... 21.75c

100 Per Cent Rag Parchment Deed

No. 141—2,000 lbs., No. 64; flat, cut 33x34 ins. Min. order 2,000 lbs.

Barton, Duer & Koch Paper o..... 20.80c

Sulphite Ledger, White and Colored

No. 151—170,000 lbs., white, Nos. 56 and 64; flat, cut any size, min. width 17 ins., max. width 32 ins. Min. order, one substance, 10,000 lbs.

Virginia Paper Co..... 6.31c

No. 152—10,000 lbs., white, No. 80; flat, cut any size, min. width 17 ins., max. width 32 ins. Min. order 10,000 lbs.

Virginia Paper Co..... 6.38c

No. 153—2,000 lbs., blue, buff, green, pink, salmon and yellow, No. 80; flat, cut 21x32½ ins., Min. order, one color, 2,000 lbs.

Whitaker Paper Co..... 7.51c

25 Per Cent Rag Ledger, White and Colored

No. 154—30,000 lbs., white, Nos. 48 and 56; flat, cut 20x28, 21x32, 24x33, 28x29 and 28x34 ins. Min. order, one substance, 5,000 lbs.

Walker, Goulard Plehn Co..... 8.51c

No. 155—5,000 lbs., white, No. 64; flat, cut 21x32 and 23x36 in. Min. order 5,000 lbs.

Walker, Goulard Plehn Co..... 8.51c

No. 156—25,000 lbs., white, No. 72; flat, cut 20x28, 21x32, 24x38 and 28x34 ins. Min. order 5,000 lbs.

Walker, Goulard Plehn Co..... 8.51c

No. 157—30,000 lbs., blue, buff, green, pink, salmon and yellow, Nos. 56, 64 and 72; flat, cut 21x32, 23x36, 24x38, 26x36 and 28x34 ins. Min. order, one substance, one color, 3,000 lbs.

Whiting Paper Co..... 8.75c

50 Per Cent Rag Ledger, White and Colored

No. 160—200,000 lbs., Nos. 48 and 56; flat, cut 18½x36, 18½x40¼, 20x28, 21x32, 24x38, 28x29 and 28x34 ins. Min. order, one substance, 10,000 lbs.

Whiting Paper Co..... 9.25c

No. 161—25,000 lbs., white, No. 64, flat, cut 21x32, and 23x36 ins. Min. order 10,000 lbs.

Whiting Paper Co..... 9.25c

No. 162—100,000 lbs., white, Nos. 72 and 80; flat, cut 20x28, 21x32, 24x38 and 28x34 ins. Min. order 10,000 lbs.

Whiting Paper Co..... 9.25c

No. 163—80,000 lbs., white, No. 88; flat, cut 21x32½ in. Min. order 10,000 lbs.

Whiting Paper Co..... 9.35c

No. 164—50,000 lbs., blue, buff, cherry, green, pink, salmon and yellow, Nos. 56, 64 and 72; flat, cut 18½x36, 18½x40¼, 19x24, 21x32, 23x36 and 28x34 ins. Min. order, one substance, one color, 5,000 lbs.

Aetna Paper Co..... 9.92c

No. 165—70,000 lbs., blue, buff, cherry, fawn, green, pink, salmon and yellow, No. 88; flat, cut 21x32½ ins. Min. order, one color, 5,000 lbs.

Aetna Paper Co..... 9.92c

75 Per Cent Rag Ledger, White and Colored

No. 168—30,000 lbs., white, Nos. 48 and 56; flat, cut 21x32, 24x38, 28x29 and 28x34 ins. Min. order, one substance, 5,000 lbs.

Barton, Duer & Koch Paper Co..... 13.82c

No. 169—5,000 lbs., white, No. 64, flat, cut 21x32, 23x36, 24x38 and 28x34 ins. Min. order 5,000 lbs.

Barton, Duer & Koch Paper Co..... 13.82c

No. 170—20,000 lbs., white, Nos. 72 and 80; flat, cut 20x38, 21x32, 24x38 and 28x34 ins. Min. order, one substance, 5,000 lbs.

Barton, Duer & Koch Paper Co..... 13.82c

No. 171—5,000 lbs., white, No. 88; flat, cut 21x32½ ins. Min. order 5,000 lbs.

Barton, Duer & Koch Paper Co. 13.82c

No. 172—15,000 lbs., blue, buff, cherry, green, pink, salmon and yellow, Nos. 56, 64 and 72; flat, cut 21x32, 23x36, 24x38, and 28x34 ins. Min. order, one substance, one color, 3,000 lbs.

Whiting Paper Co. 14.75c

No. 173—4,000 lbs., blue, buff, cherry, fawn, green, pink, salmon and yellow, No. 88; flat, cut 21x32½ ins. Min. order, one color, 4,000 lbs.

Whiting Paper Co. 14.75c

100 Per Cent Rag White Ledger

No. 176—5,000 lbs., white, No. 48; flat, cut 21x32, 22¾x31½, 23x36, 24x38 and 28x34 ins. Min. order 5,000 lbs.

Barton, Duer & Koch Paper Co. 19.47c

No. 177—10,000 lbs., No. 56; flat, cut 20x28, 21x32, 23x36, 24x38 and 28x34 ins. Min. order 5,000 lbs.

Barton, Duer & Koch Paper Co. 19.47c

No. 178—15,000 lbs., No. 64; flat, cut 18½x42, 21x32, 23x36 and 28x34 ins. Min. order 5,000 lbs.

Barton, Duer & Koch Paper Co. 19.47c

No. 179—10,000 lbs., No. 72; flat, cut 20x28, 21x32, 24x38 and 28x34 ins. Min. order 5,000 lbs.

Barton Duer & Koch Paper Co. 19.47c

No. 180—5,000 lbs., No. 80; flat, cut 21x32½ and 21x42 ins. Min. order 4,000 lbs.

Barton, Duer & Koch Paper Co..... 19.47c

No. 181—15,000 lbs., No. 88; flat, cut 20½x24¼, 22¾x31½ ins. Min. order 5,000 lbs.

Barton, Duer & Koch Paper Co..... 19.47c

Sulphite Index, White and Colored

No. 184—180,000 lbs., white, 22½x28½—182 and 230; flat, cut 21 x32½, 22½x28½ and 24½x32½ in., with projecting colored-paper marker between each 100 sheets. Min. order, one weight, 10,000 lbs.

Virginia Paper Co..... 5.88c

No. 185—2,000 lbs., white, 22½x28½—280 and 362; flat, cut 21x32½ and 22½x28½ ins., with projecting colored-paper marker between each 100 sheets. Min. order, one weight, 2,000 lbs.

Barton, Duer & Koch Paper Co..... 6.06c

No. 186—4,000 lbs., blue, buff, fawn, green, pink, salmon and yellow, 22½x28½—182 and 230; flat, cut 21x32½ and 22½x28½ ins., with projecting colored-paper marker between each 100 sheets. Min. order, one color, one weight, 2,000 lbs.

Graham Paper Co..... 6.79c

No. 187—2,000 lbs., blue, buff, fawn, green, pink, salmon and yellow, 22½x28½—280 and 362; flat, cut 21x32½ and 22½x28½ ins., with projecting colored-paper marker between each 100 sheets. Min. order, one color, one weight, 2,000 lbs.

Mathers-Lamm Paper Co..... 6.79c

50 Per Cent Rag Index, White and Colored

No. 190—500,000 lbs., white, 22½x28½—182 and 230; flat, cut 21x32½ and 22½x28½ ins., with projecting colored-paper marker between each 100 sheets. Min. order, one weight, 10,000 lbs.

Aetna Paper Co. 8.82c

No. 191—5,000 lbs., white, 22½x28½—280 and 362; flat, cut 21x32½ and 22½x28½ ins., with projecting colored paper marker between each 100 sheets. Min. order, one weight, 5,000 lbs.

Whiting Paper Co. 10.36c

No. 192—200,000 lbs., blue, buff, fawn, green, pink, salmon and yellow, 22½x28½—182 and 230; flat, cut 21x32½ and 22½x28½ ins., with projecting colored-paper marker between each 100 sheets. Min. order, one color, one weight, 5,000 lbs.

Aetna Paper Co. 9.22c

No. 193—15,000 lbs., blue, buff, fawn, green, pink, salmon and yellow, 22½x28½—280 and 362; flat, cut 21x32½ and 22½x28½ ins., with projecting colored-paper marker between each 100 sheets. Min. order, one color, one weight, 5,000 lbs.

Whiting Paper Co. 10.85c

100 Per Cent Rag White Index

No. 196—80,000 lbs., 22½x28½—approximately 206; flat, cut 20½x30½ and 21x32½ ins.

Walker, Goulard Plehn Co. 19.43c

White Tissue

No. 197—2,000 lbs., flat, 21x32—18; min. order 1,000 lbs.

Mathers-Lamm Paper Co. 9.68c

Facing Stereo Tissue

No. 198—500 lbs., 19x24—9; rolls 24 ins. wide (3-inch iron cores). Min. order 500 lbs.

No Bids

Coated Cover, White and Colored

No. 201—20,000 lbs., white, 20x26—130 and 160; flat, 26½x41 ins.; the grain to run lengthwise of the sheet. Min. order, 5,000 lbs.

R. P. Andrews Paper Co. 6.67c

No. 202—40,000 lbs., India tint, light green, light gray and primrose, 20x26—100; flat, 26½x41 ins.

R. P. Andrews Paper Co. 7.65c

25 Per Cent Rag Machine-Finish Cover, Colored

No. 203—15,000 lbs., quaker drab, robin's egg and terra cotta, flat, 20x25—96, in wrapped bundles, with projecting colored-paper marker between each 500 sheets. Min. order, one color, 2,500 lbs.

Stanford Paper Co. 9.14c

No. 204—80,000 lbs., blue, brown, granite, green, pink, tea and yellow, 20x26—100; flat, cut 20x25 and 3x46 ins., in wrapped bundles, with projecting colored-paper marker between each 500 sheets. Min. order, one color, 5,000 lbs.

Stanford Paper Co. 8.74c

50 Per Cent Rag Laid Cover, Colored

No. 205—80,000 lbs., (manufacturer's stock shades as selected), blue, buff, cream white, gray, green and terra cotta, 20x26—130; flat, cut 20x25, 22x23 and 26½x41 ins., in wrapped bundles, with projecting colored-paper marker between each 500 sheets. Min. order, one color, 2,000 lbs.

Lee Paper Co. 12.51c

50 Per Cent Rag Antique Cover, Colored

No. 206—30,000 lbs., dawn, goblin-blue, khaki, moss-green, sage and suède, flat, 20x25—96; in wrapped bundles, with projecting colored-paper marker between each 500 sheets. Min. order, one color, 5,000 lbs.

Stanford Paper Co. 10.61c

Wood Manila

No. 209—150,000 lbs., 24x36—80 to 120; flat, cut 21x32, 22½x34½ and 25x38 ins., in wrapped bundles with projecting colored-paper marker between each 500 sheets.

Paper Corp. of U. S. 3.45c

No. 210—250,000 lbs., 24x36—80 to 120; rolls, 18 and 21 ins. wide (3-inch iron cores).

Paper Corp. of U. S. 3.20c

Sulphite Manila

No. 211—25,000 lbs., 24x36—100 to 160; flat, cut any size in wrapped bundles. Min. order, one weight, 5,000 lbs.

Barton, Duer & Koch Paper Co. .. 4.95c

Rope Manila

No. 213—25,000 lbs., 24x36—120, 140 and 160; rolls 18 and 48 ins. wide (3-inch iron cores). Min. order 5,000 lbs.

Reese & Reese, Inc. 11.50c

No. 214—40,000 lbs., 24x36—280; rolls, 48 ins. wide (3-inch iron cores). Min. order 5,000 lbs.

Reese & Reese, Inc. 10.00c

Drumhead Manila

No. 215—20,000 lbs., 24x36—280; flat, cut 26x42 ins. Min. order 5,000 lbs.

Reese & Reese, Inc. 14.50c

No. 2 Kraft

No. 217—200,000 lbs., 24x36—80 to 160; flat, cut any size in wrapped bundles.

Whitaker Paper Co. 3.84c

No. 218—300,000 lbs., 24x36—80 to 160; cut any size, folded (25 sheets per fold), in wrapped bundles.

Whitaker Paper Co. 4.84c

No. 219—350,000 lbs., 24x36—80 to 160; rolls, 9, 11½, 24, 36, 39, and 48 in. wide, wound on wooden plugs, 1½-inch hold, or on 3-inch iron cores as may be specified.

Whitaker Paper Co. 3.60c

No. 1 Kraft

No. 220—6,000 lbs., 24x36—120 and 160; flat, cut any size, in wrapped bundles.

No award.

White Paraffin

No. 251—1,000 lbs., flat, 24x38—32. Min. order 1,000 lbs.

Mathers-Lamm Paper Co. 7.70c

White Gummed

No. 252—400,000 sheets, flat, 17x22—40, exclusive of weight of gum used. Min. order 50,000 sheets.

Mathers-Lamm Paper Co. $4.46 per M sheets

Blotting, White and Colored

No. 254—15,000 lbs., white, flat, 19x24—160, in wrapped bundles. Min. order 4,000 lbs.

Whitaker Paper Co. 5.14c

No. 255—2,000 lbs., (manufacturer's stock shade), buff and salmon, flat, 19x24—160, in wrapped bundles. Min. order 2,000 lbs.

Whitaker Paper Co. 5.24c

25 Per Cent Rag Blotting, White and Colored

No. 256—25,000 lbs., white, flat, 19x24—160, in wrapped bundles. Min. order 10,000 lbs.

Whitaker Paper Co. 6.39c

No. 257—10,000 lbs., (manufacturer's stock shade), buff and salmon, flat, 19x24—160, in wrapped bundles. Min. order, one color, 2,000 lbs.

Whitaker Paper Co. 6.49c

Desk Blotting, Colored

No. 258—12,000 lbs., (manufacturer's stock shade), blue and buff, flat, 19x24—200, in wrapped bundles. Min. order, one color, 5,000 lbs.

Whitaker Paper Co. 5.24c

No. 259—120,000 lbs., moss-green (manufacturer's stock shade), flat, 19x24—200, in wrapped bundles. Min. order 10,000 lbs.

R. P. Andrews Paper Co. 5.24c

White Stereotype Molding

No. 260—1,500 lbs., 19x24—120; rolls, 24 ins. wide (3-inch iron cores). Min. order 1,000 lbs.

No award.

Red Stereotype Molding

No. 261—1,000 lbs., 19x24—40; rolls, 24 in. wide (3-inch iron cores). Min. order 1,000 lbs.

No award.

Oiled Manila Tympan

No. 262—20,000 lbs., 24x36—approximately 200; rolls, 38 and 48 ins. wide; 10-inch diameter; wound on wooden plugs, 1½-inch hole. Min. order 5,000 lbs.

Cauthorne Paper Co. 5.75c

Plate-Wiping, For Embossing Presses

No. 263—4,000 lbs., 24x36—100; rolls, 24 ins. wide (3-inch iron cores). Min. order 1,000 lbs.

R. P. Andrews Paper Co. 5.66c

Back-Lining For Case-Making Machines

No. 264—2,000 lbs., 24x36—180; rolls, 24 ins. diameter, 37 ins. wide, (3-inch iron cores). Min. order 2,000 lbs.

Dobler & Mudge 3.44c

High-Finish Red Sulphite

No. 265—7,000 lbs., flat, 24x36—320 and 400, in wrapped bundles. Min. order 5,000 lbs.

Barton, Duer & Koch Paper Co..... 5.61c

High-Finish Sulphite Manila Tag

No. 271—150,000 lbs., 24x36—160 to 280; flat, cut any size, min. width 24 ins., max. width 38 ins., in wrapped bundles.

Whitaker Paper Co. 4.88c

Calendered Tag, Manila and Colored

No. 276—800,000 lbs., manila, 22½x28½—approximately 148; rolls, 23¼ and 26½ ins. wide (6-inch iron cores).

Barton, Duer & Koch Paper Co. 6.85c

No. 277—100,000 lbs., blue, brown, green, pink, red, salmon and yellow, 22½x28½—approximately 148; rolls, 23¼ and 26½ ins. wide (6-inch iron cores). Min. order, one color, 10,000 lbs.

Barton, Duer & Koch Paper Co. 7.60c

Jute Tag

No. 280—100,000 lbs., 22½x28½—200 and 280; flat, cut 22½x28½ ins., in wrapped bundles. Min. order, one weight, 10,000 lbs.

Reese & Reese, Inc. 7.10c

Manila Board

No. 281—30,000 lbs., 22½x28½—400; flat, cut 17x28, 21x32 and 22½x28½ ins., in wrapped bundles with projecting colored-paper marker between each 100 sheets. Min. order 10,000 lbs.

Graham Paper Co. 3.63c

Railroad Board, White and Colored

No. 302—20,000 sheets, white, flat, 22x28 ins., 4-ply, each 100 sheets fully banded, packed in wooden cases. Min. order 10,000 sheets.

Virginia Paper Co. ..... per M sheets $16.82

No. 303—10,000 lbs., white, flat 22x28 ins., 8-ply, each 100 sheets fully banded, packed in wooden cases. Min. order 5,000 sheets.

Virginia Paper Co. ..... per M sheets $25.19

No. 304—10,000 sheets, white, flat, 22x28 ins., 14-ply, each 50 sheets fully banded, packed in wooden cases. Min. order 5,000 sheets.

Virginia Paper Co. ..... per M sheets $39.85

No. 305—40,000 lbs., ash gray, blue, buff, green, lemon and orange, flat, 22x28 ins., 4-ply, each 100 sheets fully banded, packed in wooden cases. Min. order, one color, 5,000 sheets.

Walker, Goulard Plehn Co. per M sheets $27.94

Wood Bristol, Colored

No. 306—50,000 lbs., buff, 22½x28½—150; rolls 22 ins. wide (6-inch iron cores).

Barton, Duer & Koch Paper Co..... 4.65c

No. 307—80,000 lbs., blue, buff, gray, green, melon, pink, quaker-drab, and yellow, flat, 21x31—204, in wrapped bundles with projecting colored-paper marker between each 100 sheets.

Barton, Duer & Koch Paper Co. 4.65c

No. 308—120,000 lbs., blue, brown, buff, gray, green, melon, pink and yellow, 22½x28½—200; rolls 20 ins. wide (6-inch iron cores).

Barton, Duer & Koch Paper 4.65c

No. 309—120,000 lbs., blue, brown, buff, gray, green, melon, pink and yellow, 22½x28½—200, rolls 20 ins. wide (6-inch iron cores).

Barton, Duer & Koch Paper Co. 4.65c

No. 310—30,000 lbs., buff, 22½x28½—200; flat, cut 12x18 and 14½x17½ ins., the grain to run lengthwise of the sheet, in wrapped bundles with projecting colored-paper marker between each 100 sheets.

Barton, Duer & Koch Paper Co. 4.65c

United States Postal Card Bristol

No. 325—5,500,000 lbs., 22½x28½—188; rolls 33 ins. wide and 34 ins. in diameter (6-inch iron cores).

Whitaker Paper Co. for 2,750,000 lbs..... 4.40c
R. P. Andrews Paper Co. for 2,750,000 lbs. 4.40c

Pressboard, Colored

No. 351—20,000 sheets, red, flat, 24x32 ins., thickness .0140 inch. Min. order 5,000 sheets.

Barton, Duer & Koch Paper Co. per 100 Sheets 6.16

No. 352—10,000 sheets, gray, flat, 30x36 ins., thickness .0300 inch. Min. order 5,000 sheets.

Barton, Duer & Koch Paper Co. per 100 Sheets 17.03

News Board

No. 360—4,000 lbs., flat, 26x38 ins., No. 100. (To be trimmed square on four sides). Min. order, 1,000 lbs.

Mathers-Lamm Paper Co. 1.815c

Chip Board

No. 361—1,200,000 lbs., 26x36 ins., No. 50; flat, cut 21½x32½, 24½x38, 26x38, 28½x34½ and 32½x42½ ins.

Container Corp. of America 1.2875c

Marble Grained Lined Board

No. 362—15,000 lbs., 26x38 ins., No. 50; flat, cut 22x32 ins.

Mathers-Lamm Paper Co. 4.028c

Strawboard

No. 363—5,000 lbs., flat, 26x38 ins., No 50.

No award.

Lined Chip Board

No. 364—5,000 lbs., flat, 26x36 ins., No 50.

Virginia Paper Co. 1.799c

Lined Box Board

No. 365—36,000 lbs., 26x38 ins., No. 40; flat, cut 24½x34 ins. Min. order 36,000 lbs.

Whitaker Paper Co. 1.798c

Binder's Board, No. 1 Quality

No. 366—300,000 lbs., flat, to trim 25x30 ins., Nos. 16, 18, 20, 25, 30 and 40.

Mathers-Lamm Paper Co. 3.20c

No. 367—50,000 lbs., 25¾x30¾ ins., Nos. 12 and 20; flat, to trim 34x44 ins.

Mathers-Lamm Paper Co. 3.20c

Binder's Board, Best Quality

No. 368—40,000 lbs., flat, to trim 20x30 ins., and 22x28 ins., Nos. 18, 20, 25, 30, 35, 40 and 45.

Graham Paper Co. 3.40c

Vacuum Gauge Ends Disputes

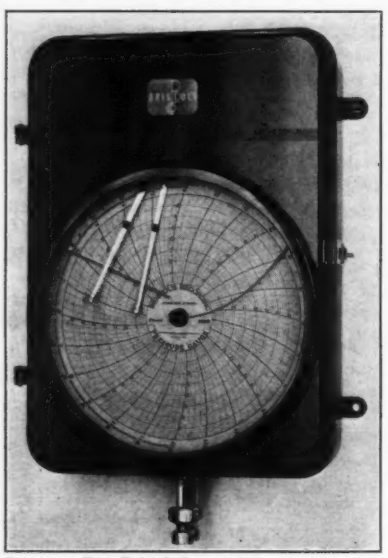
Places Blame

A 2-pen, recording vacuum gauge at the Monadnock Paper Mills, Bennington, N. H., has proved an eminently fair, but exacting, taskmaster; continuously posting its findings, from which there is absolutely no appeal, guiding with unceasing vigilance the operation of an important paper machine, maintaining the mill's reputation for quality output. With its pens acting independently, it traces in red ink on a revolving chart the degree of vacuum maintained on the couch rolls, from instant to instant, day and night, and in green ink posts a like continuous record of the suction on the flat boxes. There is not a moment while paper is being made when the machine tenders have not before them the simultaneous values of these critical suctions, the recording gauge being mounted on the machine floor on the front side of the machine.

Installed comparatively recently for this one purpose, it was quickly found that the daily charts also record the occurrence of each machine shutdown and its duration. The exact time a change rate order goes into effect is noted and when and how often the dandy-roll is washed. The relative freeness of the stock supplied by the beaters is correctly appraised. All this valuable information is posted in plain view for all those concerned to note and be guided by.

With the cooperation of another detecting instrument, by which the instantaneous rate of paper production is ascertained and continuously recorded, any unsatisfactory service by the beater room is made known promptly and the necessary correction indicated. Blame for any off-weight paper is definitely placed.

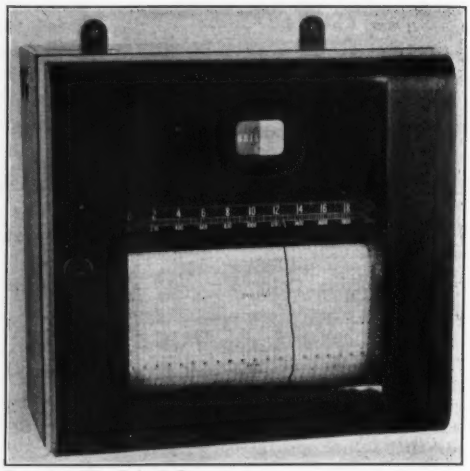
Part of the instructions issued for a run of paper by the superintendent advise the machine tenders of the degrees of vacuum required on the couch rolls and flat boxes and the correct machine speed for the quality and density of stock ordered furnished by the beater room. If the weight of paper produced then goes off, the charted instrument records unerringly place responsibility for the failure.



Courtesy: The Bristol Co.

FIG. 1

"Master" vacuum recording-gauge at the Monadnock Paper Mills post continuous records of vacuums held on couch rolls and flat boxes, noting all variations.



Courtesy: The Bristol Co.

FIG. 2

New wide-strip chart tachometer indicates and accurately records any changes in machine speed.

No longer can the machine tenders charge the beater crew, claiming that the stock supplied was too heavy or too free. No longer can the beater room charge the machine tenders with loose operation. The superintendent knows the facts, for the records unfailingly show where the fault lies. If the "assistant" tachometer reports the paper machine speed as having been correct and the "master" recording gauge's charts show that the specified vacuums were held and notwithstanding the paper produced is unsatisfactory, the blame clearly lies with the consistency of the stock supplied by the beater room. That department then has to make the adjustments and is held accountable for any sustained loss.

The rule works both ways, of course, so if the machine tenders have been remiss in any way, have failed to hold suctions, allowed the machine speed to get out of step or have neglected to clean a fouled dandy-roll, then these errors have first to be rectified. With the machine tenders kept advised constantly on the critical suction and speed situations, however, they know, the "Super" knows and the "Office" knows instantly what is wrong if the paper comes off poor and just who is at fault. There can be no alibis under the unceasing supervision of the recording instruments. No unjustified charges jeopardize jobs at Monadnock.

Estate of Z. Marshall Crane

[FROM OUR REGULAR CORRESPONDENT]

PITTSFIELD, Mass., May 26, 1936—The estate of the late Z. Marshall Crane, Dalton paper manufacturer, inventoried $5,200,000 according to executors' bonds filed in Probate Court last week. Of this $5,000,000 is in personal property. The executors are Charles J. Kittredge of Dalton Zenas Crane Coit of Auburn, N. Y., residuary legatee, and The Pittsfield Third National Bank and Trust Company.

Illinois and Iowa Paper Men Meet

An interesting meeting of the Illinois Paper Merchants Association and the Iowa Paper Merchants Association was held at the Fort Armstrong Hotel, Rock Island, Ill., on Thursday, May 7.

W. P. Peterson, president of the Iowa Association, presided at the opening session and introduced A. D. Riley, Pratt Paper Company, Des Moines, whom he had requested to bring some message to the meeting and who gave the members the benefit of an unusually keen and far-sighted view of the paper merchants' problems. Mr. Riley said:

"We have tried to escape the menace of the sideline merchant by incorporating too many lines into our own business. We have lost the creative idea of selling paper and we must return to some principle that we know to be sound. We must unite our forces and have a basis of confidence for presenting our facilities to the manufacturer and saying 'We are your logical distributors.' Then, we must have the brains to deliver.

"Sixty-eight per cent of the retail trade is still served by the independent merchant. Legislation, actual and prospective, is beginning to cause chains to unload their stores on individuals and the trend is toward decentralization.

"The problem of transportation is a tangible one that we can work on and requires our best efforts. As an industry, we can do much if we have some one constantly on the job like Mr. Spaulding. He has done some excellent work but he and your Traffic Committee representatives are absolutely dependent upon your individual support. You must furnish them with data and do your full part to win this transportation fight. Whether by rail or truck doesn't matter so long as it is uniform and equitable to all."

Mr. Spaulding emphasized what Mr. Riley said about transportation problems, referring to the formation of the new Traffic Committee of the National Paper Trade Association and bespeaking all possible assistance from every member.

A thoughtful address on competition was made by R. A. Moritz, of the Moritz Advertising Agency, Davenport.

At the afternoon meeting, C. E. Roach, president of the Illinois group, presided, and led a discussion on the subject of Salesmen's Compensation. He explained that he had installed in his company a system of net profit control and distributed charts used in his office with detailed explanation of the method of calculating the actual compensation paid.

Mr. Spaulding again spoke informally, supplementing Mr. Roach and reviewing various features of National Paper Trade Association activities. He further emphasized the thought of Mr. Riley that we must look inside instead of outside for a solution of our problems.

He discussed the matter of processing tax refunds and legislation, urging all members to avail themselves of the advice that the New York office was able to give them through Counsel, who is recognized as an authority on this subject.

The meeting adjourned late in the afternoon with an unanimous expression from all present that it had been an exceedingly pleasant and profitable occasion, and such joint meeting should frequently be repeated.

There was an attendance of twenty-three members representing the following houses:

Peterson Paper Company, Davenport, Iowa; Pratt Paper Company, Des Moines; Davenport Bag and Paper Company, Davenport; Baker Paper Company, Cedar Rapids; Burlington Paper Company, Burlington; Langan Paper Company, Des Moines; McFarland Paper Company, Keokuk; Morris Sanford Company, Cedar Rapids; Clinton Paper Company, Clinton; Shocker Paper Company, Rock Island, Illinois; Capital City Paper Company, Springfield; Robert Pilcher Paper Company, Joliet; Elgin Paper Company, Elgin; Keller-Flesch Paper Company, Alton; Newhouse Paper Company, Moline; John C. Streibich Company, Peoria.

C. A. Spaulding, assistant secretary of the National Paper Trade Association was also present.

Michigan Superintendents Meet

KALAMAZOO, Mich., May 26, 1936—The last meeting until September of the Michigan Division of the Paper Mill Superintendents' Association was held at the Park-American Hotel on Thursday evening, May 21, at 7 P. M. The attendance was a little light but the interest and enthusiasm offset the lack of numbers. A fine dinner was enjoyed, following this Chairman Otto Fischer called the meeting to order. He announced that four gentlemen, Mr. Ulrich, Mr. Berger, Mr. Stamm and Mr. Armstrong, all executives of the Armstrong Machine Works, Three Rivers, Mich., were the guests, and introduced them to the members present. The Armstrong Company manufactures a device for the automatic control of moisture content in paper making, and Mr. Ulrich read a paper describing in detail the working of his appliance, the history of the original experiments before the first installation, and an account of the results after the first one was put in actual use at the Eddy Paper Company. A small blue print of a working model of the control was furnished each superintendent at the beginning of the address so the explanation of the device could be closely followed.

At the close of Mr. Ulrich's talk, the members were invited to ask any questions pertaining to information not included in his outline. A volley of inquiries were fired at the four members of the company and all were answered in a satisfactory manner. Mrs. Marie J. Cady of Grand Rapids, the chairman on Ladies' Entertainment for the National Convention, was present and reported that her program arrangements were all completed. Roy Zellers, general chairman of the Convention, addressed the members with a report of the Convention arrangements. There are 66 exhibitor spaces sold to date and the hotel reservations easily indicate a bumper attendance.

Among those present were: Paul de Guehery, Michigan Paper Company; C. B. Smith, Huron Milling Company; Jacob Parent, Noble & Wood Machinery Company; H. C. Pearson, Pioneer Paper Stock Company; Leo A. Willoughby, Bryant Paper Company; M. Redmond, Kalamazoo Paper Company; W. F. Costello, Jos. E. Loughead Company; Arnold Weller, Sutherland Paper Company; Art Woollam, Gould's Pumps, Inc.; James A. Wise, Kalamazoo Paper Company; Harry C. Bradford, Rex Paper Company; A. M. Cole, Rex Paper Company; N. J. Cowie, Hawthorne Paper Company; Marie Jay Cady, Pantlind Hotel, Grand Rapids; F. L. Zellers, General Convention Chairman, French Paper Company; S. R. Atkinson, French Paper Company, Niles; F. C. Stamm, Armstrong Company; N. J. Berger, Armstrong Company; P. L. Ulrich, Armstrong Company; Otto F. Fischer, Bryant Paper Company; A. E. Armstrong, Armstrong Company; Al Sherwood, Sutherland Paper Company; H. M. Eastman, Paper Makers' Chemical Corporation; W. F. Hathaway, Kalamazoo Vegetable Parchment Company; A. E. Hays, Michigan Paper Company; Glen Sutton, Sutherland Paper Company; O. C. Cade, Grand Rapids.

I. P. & P. Co. Shows Gain in First Quarter

Richard J. Cullen, president, in submitting a statement of consolidated profits and loss of International Paper and Power Company and subsidiary companies, excluding International Hydro Electric System and its subsidiaries, for the three months ending March 31, 1936, together with comparative figures for the corresponding period in 1935, says that "during the first quarter of 1936, demand for paper and allied products continued to increase. Consolidated gross sales of International Paper and Power Company and subsidiaries amounted to $25,520,335, an increase of $3,033,187 as compared to the corresponding period last year, reflecting a rise of 18 per cent. in physical volume of business. Net loss for the quarter was reduced to $402,674 as compared to $1,068,996 for the first three months of 1935."

INTERNATIONAL PAPER AND POWER COMPANY
AND SUBSIDIARY COMPANIES
(Excluding International Hydro-Electric System and Subsidiaries)
Statement of Consolidated Profit and Loss
For Three Months Ended March 31, 1936 and 1935

	Three Months Ended March 31, 1936	Three Months Ended March 31, 1935
SALES AND OTHER INCOME:		
Gross sales, less returns, allowances and discounts	$25,520,335.85	$22,487,148.28
Other income—net	229,803.96	288,024.08
	$25,750,139.81	$22,775,172.36
COST AND EXPENSES:		
Cost of sales:		
Pulpwood, labor, materials, etc.	$15,822,919.77	$13,859,333.30
Maintenance and repairs	1,718,666.71	1,358,706.83
Taxes (other than income taxes)	513,821.97	488,458.70
Outward freight and delivery expenses	3,546,324.22	3,055,603.75
Selling, general and administrative expenses	1,500,056.87	1,840,889.93
Provision for doubtful accounts	156,814.53	156,909.09
	23,258,604.07	20,759,901.60
	$2,491,535.74	$2,015,270.76
DEDUCTIONS:		
Interest on funded debt	$921,719.76	$983,589.95
Interest on other debt	233,965.02	226,746.64
Amortization of debt discount and expense	85,748.02	97,232.64
Depreciation	1,174,024.44	1,316,342.12
Depletion	167,893.13	187,336.87
Provision for income taxes	131,165.00	95,968.00
Dividends accrued but not being currently paid on preferred stocks of subsidiaries	179,694.56	177,050.46
	2,894,209.93	3,084,266.68
NET LOSS	*$402,674.19*	*$1,068,995.92*

In the above consolidated financial statements foreign accounts are stated on the basis of $4.85 for the pound Sterling and at parity of exchange for Canadian and Newfoundland currencies without adjustment of differences. It is the practice of the companies to reflect in current operations any differences between these rates and the current quotations at the time funds are actually purchased or transferred.

Unpaid cumulative dividends on 7% and 6% cumulative preferred stocks of International Paper and Power Company for the period from April 15, 1931 to March 31, 1936 amount respectively to $31,307,720.96 and $110,075.00 or a total of $31,417,795.96.

The above statements are subject to final adjustment at December 31st (end of fiscal year).

Keith Paper Co. Elects Officers

The annual meeting of the Keith Paper Company was held at the office of the Company in Turners Falls, Wednesday morning, May 20. The following officers were elected for the ensuing year:

President, Jonathan Bulkley, New York; Vice president, J. Ogden Bulkley, New York; General Manager, Albert R. Smith, Turners Falls; Treasurer, Wallace B. Marston, Turners Falls; Assistant Treasurer, Karl F. Miller, Turners Falls.

Directors: Jonathan Bulkley, New York City; J. Ogden Bulkley, New York City; Stanley P. Benton, Pittsfield; Douglas Crocker, Fitchburg; Augustus P. Loring, Jr., Boston; Albrecht Pagenstecher, III, New York City; William D. Russell, Greenfield; Albert R. Smith, Turners Falls.

F. C. Ladd was recently appointed general superintendent.

Ontario Paper Industry Notes

[FROM OUR REGULAR CORRESPONDENT]

TORONTO, Ont., May 25, 1936—Premier Hepburn and the Hon. Paul Leduc, Ontario Minister of Mines, will likely visit Port Arthur this summer for the purpose of making personal surveys in timber, pulpwood and mining resources. One of the first steps in the contemplated development will be the building in of a road from Hydro, through the mining areas east of Port Arthur.

Driven down the St. Mary's River from Trafalgar, 20,000 cords of pulpwood, owned by the T. C. Bateman Company, is boomed in the salt water at Sherbrooke, N. S., awaiting shipment to Maine. Thirty-three days were taken to float the wood 35 miles to tidewater. Directed by George Armberg, forty men were employed in guiding the snake-like caravan along the St. Mary's course. Approximately 350 men will be employed by the Bateman Company in the coming summer and winter at cutting pulpwood, loading up to further shipments in the spring of 1937.

A drive of over 6,000 cords of pulpwood for the Mersey River Company is being started through an especially made sluice from Boot Lake in the Tobeatik district of Nova Scotia. This will be landed at Big Tobeatik Lake from where it will be driven down the Shelburne River to Lake Rossignol. Another drive of the same size is being brought to join it from the Pesquess Lakes. A third drive is being brought through a diversion of the Gordian waters totaling 25,000 cords in all.

I. W. Akerly has been appointed general manager for the Maritimes and Newfoundland of the McGregor Paper and Bag Company, Ltd. He will be in full charge of the company's activities in that district. He joined the McGregor organization last May as Maritimes sales manager, and has been acting manager since the first of the year. The company has enlarged its sales organization, new members of the selling staff including Charles Zinck, Horace Blackie, J. W. Fleming and Bernard Matthews.

Hinkson Paper Co. Starts

The Hinkson Paper Company was incorporated March 30 for the purpose of converting papers and the sale of glazed, plate, flint, coated, printed, intaglio and other decorated and embossed papers; cover papers, laminating and all converted paper specialties.

Some of the machines are already in operation and the company expects to place all its machines in production shortly. The plant and offices of the company are at 30 Hanover street, Springfield, Mass.

J. R. Hinkson, the president of the company, was in the past connected with the American Writing Paper Company, the Hampden Glazed Paper and Card Company and more recently, the United Manufacturing Company of Springfield, Mass., of which he was treasurer and general manager.

Harry J. Buncke Promoted

The Oxford Paper Company recently announced that, effective May 12, 1936, Harry J. Buncke, chief engineer of the company, has been appointed assistant mill manager of the mill at Rumford, Maine.

Mr. Buncke has been with the Oxford Paper Company since June, 1933 in the capacity of chief engineer, and previous to this was associated with the Abitibi Power and Paper Company, Toronto, Can.

CONSTRUCTION NEWS

A Summary of Vital Facts Regarding Construction, Finances and Operation of Paper Mills

Construction News

Fernandina, Fla.—The Container Corporation of America, Inc., 111 West Washington street, Chicago, manufacturer of corrugated paper boxes and containers, has plans under way for new pulp and paper mill at Fernandina for production of kraft paper stocks for conversion into company products at its different mills. New plant will comprise several large units, with power house, pumping station and other mechanical departments, and will be equipped for large capacity. It is estimated to cost about $5,500,000 with machinery. Financing is being arranged through the sale of new preferred stock in company, totaling close to $10,000,000. J. J. Broussard, vice-president, will supervise erection of new mill and will be in charge of operation. George F. Hardy, 305 Broadway, New York, N. Y., is consulting engineer.

Watervliet, Mich.—The Watervliet Paper Company, manufacturer of coated and other paper stocks, has approved plans for new one-story addition to mill, for which superstructure will be placed under way at once. It is reported to cost over $40,000, with equipment. General contract has been awarded to John Yerrington & Gettman Brothers Company, South Haven, Mich. Leroy & Newlander, Kalamazoo, Mich., are architects and engineers.

Orange, Mass.—The Orange Paper Box, Inc., recently organized with capital of 100 shares of stock, no par value, plans operation of local plant for manufacture of a line of paper boxes and containers. New company is headed by Alexander Hiatt, president; and Jacob Hiatt, 25 Brodgeport street, Worcester, Mass., treasurer and representative.

Berlin, N. H.—Fire recently damaged a portion of local mill of the Brown Company, manufacturer of kraft and other paper specialties. An official estimate of loss has not been announced. The damage will be replaced.

Tacoma, Wash.—The St. Regis Kraft Company has plans maturing for expansion and improvements at local sulphate pulp mill, including construction of new additions and installation of machinery for large increase in present capacity. Two or more units will be built; present mill will be improved. Work is expected to begin at early date and require about six months for completion. Entire project is reported to cost in excess of $600,000, including equipment. Company is a subsidiary of the St. Regis Paper Company, 230 Park avenue, New York, N. Y. W. W. Griffith is general manager at Tacoma plant.

Williamston, N. C.—Henry M. Hardison, Williamston, attorney, representing pulp and paper mill interests, is investigating the feasibility of the construction of a new pulp and paper mill in this part of State. Proposed plant will be of large proportions, equipped for heavy output of wood pulp and paper products.

St. Louis, Mo.—The Cupples-Hesse Envelope Company, 4173 North Kingshighway, manufacturer of commercial envelopes and allied specialties, has awarded miscellaneous contracts for new addition to plant, recently referred to in these columns, and will push erection to early completion. New unit will be two-story, 120 x 175 feet, and will be given over largely to the manufacture of paper cups and similar products, a new branch of production for company. An award for plumbing has been let to the J. A. Lynch Plumbing Company, 934 North Seventh street; for electrical work, to the Dennison-Loepker Electric Company, 15 South Tenth street; for heating to the Kupferle-Hicks Heating Company, 3974 Delmar boulevard; and for sprinkler system, to Crowder Brothers Automatic Sprinkler Company, 2212 Washington street, all of St. Louis. The Gamble Construction Company, 620 Chestnut street, city, is general contractor.

Chicago, Ill.—The Ponch-O Manufacturing Corporation, Room 1705, 77 West Washington street, recently organized with capital of 100 shares of stock, no par value, plans operation of local converting plant for production of a line of paper specialties. Incorporators of new company include Edward D. Rose and Ray D. McCollum.

Watertown, Minn.—The Paper Makers Chemical Company, Kalamazoo, Mich., will soon begin superstructure for new branch plant at Watertown, comprising a two-story unit, 42 x 100 feet, estimated to cost about $50,000, including equipment.

London, Ont.—Hygrade Corrugated Products, Ltd., 640 William street, manufacturer of corrugated paper boxes and containers, is completing plans and will take bids soon on general contract for new addition to plant, to be one-story, 130 x 150 feet. It is estimated to cost over $75,000, including equipment. New unit will provide for considerable increase in present capacity. A. M. Piper, Moore Building, London, is architect.

Hamilton, Ont.—Kraft Containers, Ltd., 9047 Duke street, manufacturer of paper bags and other containers, has begun erection of new local plant, to be one and two-story, 121 x 470 feet, estimated to cost over $100,000, with equipment. General contract was awarded recently to W. H. Cooper, 42 James street, North; award for steel framing has been given to the Hamilton Bridge Company, Bay street, North, both of Hamilton. New plant will be equipped for large capacity, including division for production of corrugated shipping boxes and containers of various kinds.

Bristol Bulletin No. 440

The Bristol Company announces the publication of Bulletin No. 440 covering its new series of Ampliset Free-Vane Controllers which are available for time-temperature, flow, liquid level, pressure, time-pressure and humidity.

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FUTURE MEETINGS

TECHNICAL ASSOCIATION OF THE PULP AND PAPER INDUSTRY, Summer International Meeting in Canada, August 3 to 7, Montreal, Quebec, The Saguenay. Details may be obtained from the secretary, R. G. Macdonald, 122 East 42nd street, New York.

NEW ENGLAND SECTION, Technical Association of the Pulp and Paper Industry—Third Friday of each month at the Nonotuck Hotel, Holyoke, Mass.

DELAWARE VALLEY SECTION, Technical Association of the Pulp and Paper Industry—fourth Friday of each month at the Engineers Club, Philadelphia, Pa.

LAKE STATES SECTION, Technical Association of the Pulp and Paper Industry—second Tuesday of each month at the Conway Hotel, Appleton, Wis.

KALAMAZOO VALLEY SECTION, Technical Association of the Pulp and Paper Industry—First Thursday of each month at the Park-American Hotel, Kalamazoo, Mich.

AMERICAN PULP AND PAPER MILL SUPERINTENDENTS' ASSOCIATION, Annual convention, Grand Rapids, Mich., June 24-26, 1936.

A GENUINE BREATHING SPELL NEEDED

Business needs a genuine breathing spell from government dictum. This need was emphasized at the conference of business leaders and educators in New York last week on employment, recovery and private enterprise sponsored by the Commercial Placement Council of New York.

It was resolved by the conference

1. "That Government should encourage private enterprise by refraining from engaging in any activity for which private enterprise is adequately equipped and better qualified to perform."

2. "That business is entitled to a wholly unhampered opportunity to restore complete recovery by a genuine business breathing spell from further attempts to bring about recovery by legislative dictum."

3. "That governmental authorities be assigned * * * to the speedy preparation of authoritative facts and figures with reference to the determination of the actual number of unemployed persons in the United States with particular reference to those desiring employment; the segregation according to industries of the unemployed; the number of persons under the educational laws who reach employable age each year."

Professor Irving Fisher of Yale University expressed the belief unemployment persists chiefly because the diagnosis of the problem has been wrong.

"A wrong diagnosis has led to a wrong remedy," he said.

"The most common diagnosis of the depression has been 'overproduction,' too much goods; the unemployment of the depression has been confused with technological unemployment. Undoubtedly technological unemployment is a real problem, but it is different from the problem of depression unemployment and, by comparison, is of little consequence.

"The true diagnosis is, not too much goods but too little money to buy them with. Consequently, the true remedy was to increase the volume of our circulating medium, which had fallen by a third and slowed down in velocity even more.

"President Roosevelt did increase the circulating medium, partly by devaluation of the dollar, partly by obtaining new circulating credit from the banks. And these measures have helped vastly. Unfortunately, the wealth-destroying programs of A. A. A. and N. R. A. have worked in the opposite direction."

Dean John T. Madden of the School of Commerce of New York University declared that one of the most serious disadvantages of modern large scale production is the loss of the intimate relationship between master and servant which formerly prevailed."

"The people of our nation have lagged behind other parts of the world in their social outlook on employment relations," he continued. "Every other great industrial nation possesses more reliable data on unemployment than we do. We are way behind other nations in such matters as dismissal wages, unemployment insurance and security legislation.

"It has become the fashion in some quarters to berate private industry for its failure to solve the unemployment problem, and there is no doubt but that private industry has many sins to answer for in its employment relations. But private industry apparently is expected to bear all the burden of woe created by the expansion of bank credit, which was world-wide during the war, which greatly increased during the post-war years even in our own country, and which produced both the greatest boom and greatest smash in world history."

In his address Alvin E. Dodd, executive vice president of the American Management Association stated that in considering the responsibilities of private enterprise in the employment problem the first step must be to find out how many are unemployed.

"There will be very little real progress until we have a census of unemployment," he said.

"Private enterprise may well urge a periodical counting of the unemployed. Even one such counting would help. After several such countings on the same basis we shall be able to speak intelligently about our problem."

Merryle S. Rukeyser, financial writer, declared that only confused advice is delaying the greatest period of prosperity in the country's history. He said:

"Under conditions of a genuinely balanced internal economy, with Government and business cooperating in-

telligently, I can visualize a long term rise in living standards that will make the plateau of 1926-29 appear like a depression level.

"Under balanced relationships, science and invention will continue to yield vast dividends in leisure and material goods."

Approved Papers for the State of Delaware

Dover, Del., May 20, 1936.

EDITOR PAPER TRADE JOURNAL:

At the last session of the Delaware General Assembly an act was passed requiring all custodians of public records and registries of State, county, and incorporated municipalities to use paper and ink of standard qualities, and directing the Public Archives Commission to supervise the enforcement of said act.

A number of paper manufacturers have sent us samples and specifications of their linen ledger papers (100 percent rag permanent) which come under class I of the Federal Bureau of Standards for papers of maximum purity for permanent records. Some manufacturers have sent samples and specifications of ledger and bond papers which come under class II of the Federal Bureau of Standards for papers of high purity for semi-permanent records.

As we shall soon be ready to publish a list of approved papers for records in the State of Delaware, and as we do not wish to revise the list immediately after it is issued, we would like to be reasonably sure that all paper manufacturers doing business in the State of Delaware are informed about our law concerning standard papers. You would, therefore perform a service to your subscribers as well as to us if you would publish this letter.

Paper manufacturers who may wish to submit samples and specifications of their papers should communicate with the Public Archives Commission, Dover, Delaware.

Thanking you for your cooperation, I am,

Very sincerely yours,

GEORGE H. RYDEN,
State Archivist.

Mead Corp. Reports Earnings

[FROM OUR REGULAR CORRESPONDENT]

DAYTON, Ohio, May 25, 1936—A consolidated net income of $155,200 for the 12 weeks ended March 21, after all deductions including reserve for Federal taxes, was reported the past week by the Mead Corporation, of which George H. Mead of Dayton is the head.

This is equal to 18 cents a share on the common shares, totaling 588,000, outstanding, after provision for preferred dividends.

The company showed a net income of $123,154, after all deductions and Federal taxes, in the corresponding period of last year.

A letter issued to stockholders, pointed out that earnings are subject to adjustment and independent audit at the end of the year.

T. E. Knowlton Made Trustee of R.P.I.

[FROM OUR REGULAR CORRESPONDENT]

WATERTOWN, N. Y., May 26, 1936—Theodore E. Knowlton, vice-president and general manager of Knowlton Brothers, Inc., was this week elected an alumni trustee of Rensselaer Polytechic Institute of Troy. He was graduated in 1893 and succeeds Edwin G. Adams of New York City. He is a brother of G. Seymour Knowlton, head of Knowlton Brothers, Inc., who also resides here.

Production Ratio Report

(These statistics are based upon paper production reports to the American Paper and Pulp Association.)

COMPARATIVE MONTHLY SUMMARIES

Month	1936	1935	1934
January	76.1%	65.8%	.....
February	77.9%	70.0%	.....
March	76.0%	70.5%	.....
April	82.4%	70.0%	.....
May	.....	69.4%	.....
June	.....	72.3%	.....
July (b)	.....	67.8%	.....
August	.....	70.9%	.....
September (c)	.....	75.0%	59.4%
October	.....	75.6%	64.7%
November	.....	75.3%	61.7%
December (a)	.....	74.3%	62.1%
Year	.....	71.2%	.....

COMPARATIVE WEEKLY SUMMARIES

CURRENT WEEKS, 1936		CORRESPONDING WEEKS, 1935	
*May 9	81.2%	May 11	69.1%
*May 16	79.6%	May 18	70.7%

The following statistics show the number of mills reporting by ratio groups:

Ratio Limits	Number of Mills Reporting Current Weeks: May 9, 1936	May 16, 1936
0% to 50%	73	57
51% to 100%	253	185
Total Mills Reporting	326	242

* Subject to revision until all reports are received.
These data exclude (a)—Christmas Day, (b)—Fourth of July, (c)—Labor Day.

According to reports from the National Paperboard Association, per cents of operation, based on "Inch-Hours," were as follows:

PAPERBOARD OPERATING RATIOS

1934		1935		1935		1935		1936	
Sept.	62%	Jan.	61%	May	61%	Sept.	69%	Jan.	61%
Oct.	63%	Feb.	67%	June	65%	Oct.	76%	Feb.	67%
Nov.	56%	Mar.	67%	July	59%	Nov.	70%	Mar.	68%
Dec. (a)	53%	Apr.	61%	Aug.	65%	Dec.	60%	Apr.	70%

Week ending May 9, 1936—67%
Week ending May 16, 1936—67%

Paper Men to Meet at Virginia Beach

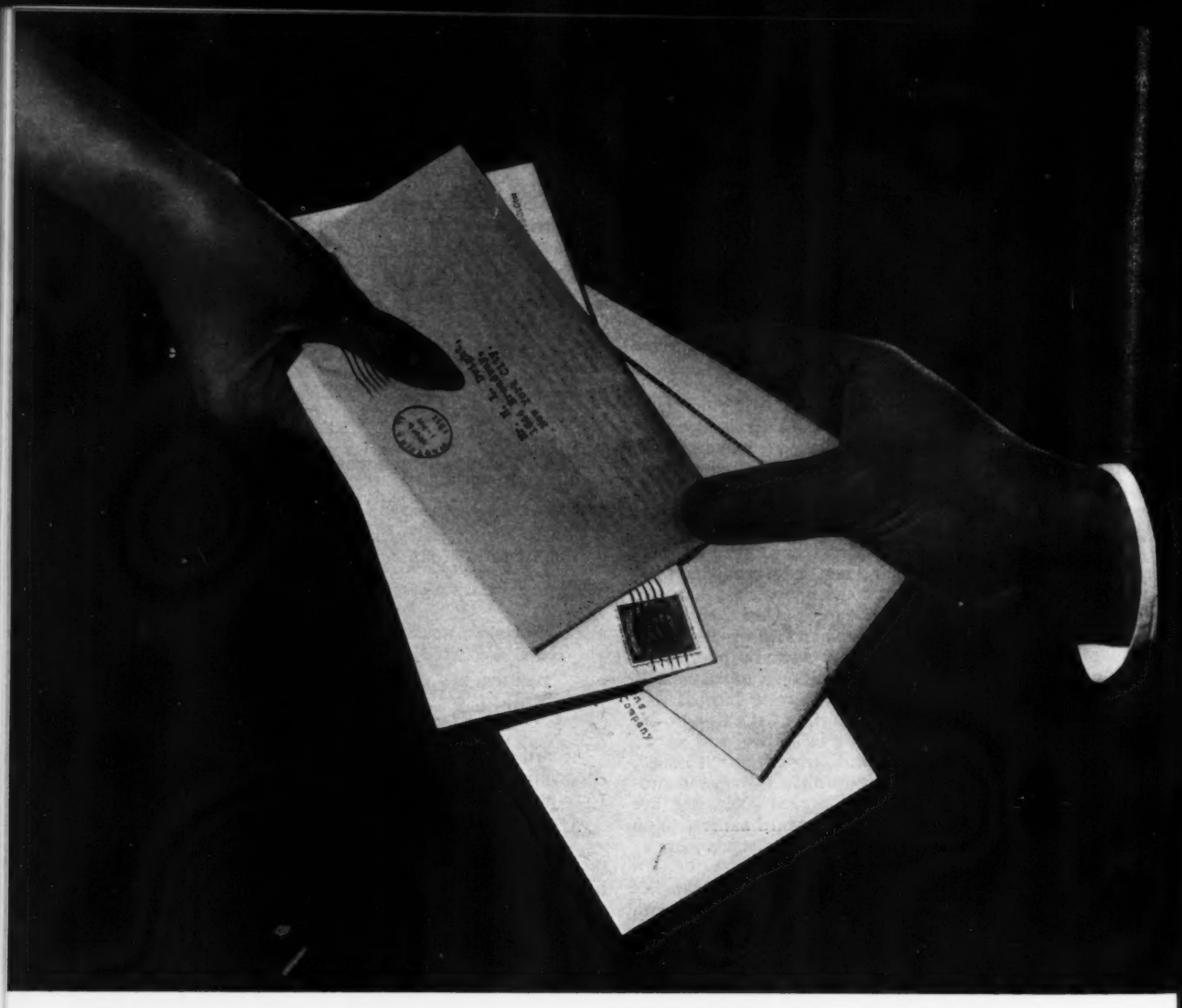
The annual spring meeting and golf tournament of the Southeastern Paper Trade Association will be held at the Cavalier Hotel, Virginia Beach, June 11-13. A full attendance of the members is expected and invitations have also been issued to members of adjoining associations.

Chairman R. S. Johnston, Old Dominion Paper Company, Norfolk, has also issued very handsome and alluring invitations to manufacturers' executives and territorial representatives, many of whom make a point of participating annually in this very enjoyable affair which is assuming more and more importance as a gathering of paper merchants and their sources of supply for social enjoyment and discussion of their mutual problems.

Chairman Johnston is very anxious to hear definitely from all who expect to attend in order to make best possible arrangements for their accommodation and entertainment.

Finnish Journal Issues Special Number

The annual special issue of the *Finnish Paper and Timber Journal,* Helsingfors, Finland, which has just been published, is an unusually interesting and attractive work. A generous section of the book is printed in English. This section among other articles includes a complete description of the new Kaukopää sulphate pulp mill. A full page is devoted to a portrait of Colonel Gösta Serlachius who is favorably known to many in the American paper industry. The book is profusely illustrated with many interesting pictures and is attractively bound.



Do your envelopes have "Hiding Power"?

If not, the true function of an envelope is absent. While "hiding power" or opacity is not the sole factor in envelope quality, it is one of the characteristics necessary for high grade appearance and performance.

Envelope stock is only one of the many papers that can be economically opacified and whitened by the use of Zinc Sulphide Pigment.

The Cryptones and the Albaliths are uniform quality Zinc Sulphide Pigments manufactured in many strengths to meet the particular requirements of many papers.

Our Technical Service Staff will be glad to assist you on any problems in this work.

THE NEW JERSEY ZINC COMPANY
160 FRONT ST., NEW YORK

ZINC SULPHIDE PIGMENTS IN PAPE

Section of the
Technical Association of the Pulp and Paper Industry
Edited by Ronald G. Macdonald, Secretary

Delaware Valley TAPPI Discusses Fibers

The Delaware Valley Section of the Technical Association of the Pulp and Paper Industry met at the Engineers Club, Philadelphia, Pa., Friday, May 22. Harvey P. Cannon of the Container Corporation of America presided as chairman.

Guests Present

R. G. Macdonald, National Secretary of TAPPI was present and reported that the early indications show that the joint summer meeting with the Canadian Technical Section will be an outstanding success, particularly in so far as attendance is concerned. The summer meeting to be held from August 3 to 7 will be held in the Province of Quebec. August 3 will be devoted to the presentation of papers at the Mount Royal Hotel and the remainder of the week will be used to cruise down the St. Lawrence and up the Saguenay Rivers, stopping at Quebec City, Murray Bay, Baggottville, and visiting the mills of the Anglo-Canadian Pulp and Paper Company and Price Brothers at Riverbend. Early reservations are advisable to obtain the best stateroom and assignments.

The Secretary also stated that there is still an opportunity for a few members of TAPPI to attend the special course in fiber identification to be given at the Institute of Paper Chemistry from June 9 to 18. Details can be obtained from the TAPPI New York office, 122 E. 42nd street.

Max A. Krimmel of the Hammermill Paper Company and past president of TAPPI was present and described the new fuzz detector that was invented in the Hammermill Laboratories.

W. R. Maull, Vice President of Dill & Collins Inc. and Vice President of TAPPI, reported on his recent visits to the other TAPPI Sections and reminisced on the early days of the Delaware Valley Section.

Mr. Cannon, as outgoing chairman of the Section passed along the Chairman's gavel and other material to H. C. Schwalbe of Dill & Collins Inc., the newly-elected Chairman, who spoke with the highest praise of the excellent accomplishments of Mr. Cannon since the founding of the organization.

C. M. Connor read his annual Treasurer's Report which showed the Section to be in a remarkably strong financial condition.

Talks on Papermaking Fibers

Three members participated in a symposium on papermaking fibers: Dr. Schwalbe discussed straw and esparto; A. J. Luettgan of P. H. Glatfelter Company, talked on soda pulp; and James d'A. Clark of the Scott Paper Company presented a summary of pulp characteristics recently compiled from data regarding a large number of tests made in the new laboratory kollergang.

Since the papers of Dr. Schwalbe and Mr. Clark will be published at a later date they will not be reported here. Mr. Luettgan talked from notes and said in part:

Tulip poplar soda fibers have a density of from 25.3 to 31 pounds per cubic foot, and likewise depending on the growth conditions has a cellulose content of from 47 to 63 per cent. The chemical properties depend on cooking and particularly on subsequent treatment. The pentosans run about 100 per cent higher in bleached soda fibers than in fibers of coniferous woods. The alpha cellulose content is about 80 per cent.

For physical properties poplar soda fibers have a burst higher than so called No. 2 sulphite; the fold and tear is low. The average fiber length is about 1.8 mm. and some fibers are about 2 mm. long.

His manipulation through cooking technique both hard and soft fibers are obtainable. Papers containing bleached soda require from 20 to 30 per cent less sizing than bleached sulphite. Such papers have bulk and the soda fibers act as a filler, giving a close surface which is suitable for good printing. When a good dandyroll watermark is desired this is helped by soda pulp content.

An enthusiastic discussion followed the presentation of papers. The next meeting will be held at a country club near Philadelphia on June 19. Reservations should be made with Riley M. Bates of the Thomas M. Royal Co., 5800 N. 7th street, Philadelphia, Pa.

Those Who Attended

Among those present were: R. E. Aiman, Norristown, Pa.; F. W. Varden, The Barber Asphalt Company, Philadelphia; J. Carl Schmidt, Dupont Company, Philadelphia; R. W. Ball, Krebs Pigment & Color Corporation, Newport, Del.; Jacob Edge, Downingtown Manufacturing Company, Downingtown, Pa.; C. W. Richards, Krebs Pigment and Color Corporation, Newport, Del.; C. F. Weitzel, Pennsylvania Salt Mfg. Co., Philadelphia; E. J. Albert, Thwing-Albert Instrument Company, Philadelphia, Pa.; L. F. Derr, Goulds Pumps Inc., Philadelphia; V. Jacobsen, National Aniline & Chemical Company, Philadelphia; E. F. Gates, B. F. Goodrich Company, Akron, Ohio; H. F. Hoffmann, General Dyestuff Corporation, Philadelphia; C. J. Kern, Moore & White Company, Philadelphia; Leslie Justice, Valley Forge Laboratories, W. Conshocken, Pa.; John Roslund, Moore & White Company, Philadelphia; J. M. Tuttle, Glassine Paper Company, W. Conshohocken; A. R. Boyd, F. C. Huyck &

Sons, Albany, N. Y.; J. H. Fritz, National Oil Products Company, Harrison, N. J.; A. E. Waugh, U. S. Rubber Company, Philadelphia; R. G. Macdonald, secretary of TAPPI, New York; C. W. Rivise, Caesar & Rivise, Philadelphia; R. M. Bates, Thos. M. Royal & Co., Philadelphia; G. B. Martin, General Dyestuff Corporation, Philadelphia; B. J. Martin, Syracuse, N. Y.; C. C. Stewart, C. C. Stewart Paper Company, Philadelphia; H. F. Mahaley, P. H. Glatfelter Company, Spring Grove, Pa.; W. R. Maull, vice president of TAPPI, New York; M. A. Krimmel, Hammermill Paper Company, Erie, Pa.; H. C. Schwalbe, Dill & Collins Inc., Philadelphia; A. J. Luettgen, P. H. Glatfelter Company, Spring Grove, Pa.; H. L. Becher, Agasote Millboard Company, Trenton, N. J.; Sam Reynolds, Container Corporation of America, Manayunk, Pa.; J. R. Atwater, Dill & Collins Inc., Philadelphia; Charles McDowell, McDowell Paper Mills, Manayunk; A. W. Wickham, Mac Andrews & Forbes Company, Camden, N. J.; Paul Koenig, P. H. Glatfelter Company, Spring Grove, Pa.; E. R. Fricht, Container Corporation of America, Manayunk; C. A. Bentz, P. H. Glatfelter Company; J. d'A. Clark, Scott Paper Company, Chester, Pa.; H. P. Cannon, Container Corporation of America, Manayunk; C. M. Connor, Valley Forge Laboratories, Conshohocken, Pa.

TAPPI Summer Meeting in Historic Canada

The following books are suggested from a large number as reading material relevant to the district through which you will be travelling. With this background you will be sure to enjoy to a fuller extent the many historical points of interest en route. If you are unable to procure these books from your bookseller, P. J. Evoy, 141 St. John Street, Quebec, P. Q. is able to supply them:

Title	Author	Publisher	Price
Quebec of Yester-Year...	A. G. Doughty..	Thos. Nelson & Sons, Ltd.	$3.00
Romantic Quebec.....	Blodwen Davies.	McLelland & Stewart.....	2.75
Canadien; a Study of the French Canadians.....	Filfrid Bovey....	J. M. Dent & Sons, Ltd...	2.00
The Old Province of Quebec	Alfred L. Burt..	Ryerson Press.....	6.00
The Romance of Quebec..	J. C. Sutherland.	W. J. Gage & Co., Ltd...	1.00
Legends of French Canada	E. C. Woodley..	Thos. Nelson & Sons, Ltd.	1.50
Quebec, where Ancient France Lingers.....	Marius Barbeau.	The Macmillan Co.....	2.50
The Kingdom of the Saguenay	Marius Barbeau.	The Macmillan Co.....	2.50
The Golden Dog.....	William Kirby...	Musson	2.00
From Quebec to New Orleans; the Story of the French in America.	J. H. Schlarenau.	Buechler Publishing Co....	5.00

Reservations are coming in every day for the summer meeting and cruise of TAPPI and the Technical Section of the Canadian Pulp and Paper Association. The rates are 52 and 54 dollars per person and reservation should be made with the Tobin Travel Bureau, 4109 Peel Street, Montreal, P. Q.

A well balanced program is promised and will consist of presentation of technical papers, mill visits, golf, sightseeing, cruise up the Saguenay River and congenial acquaintances. Accommodations for the cruise is limited to 500. About 200 reservations have been made.

Industrial Compressors and Vacuum Pumps

Ingersoll-Rand catalog 7502-E covers the company's "Type 30" line of Industrial Compressors and Vacuum Pumps. 28 pages and cover. Compressors single- and two-stage, ¼ to 15 hp., 1.2 to 102 cubic feet per minute, pressures to 1,000 lbs., vacuums to within .35" (Hg.) of barometer. Units mounted on horizontal and vertical tanks are shown; also units unmounted, and mounted on carriages.

A copy may be obtained from Ingersoll-Rand, 11 Broadway, New York City or any branch office.

New TAPPI Members

The Executive Committee of the Technical Association of the Pulp and Paper Industry has announced that the following have been elected to membership:

J. Rex Adams, plant chemist, Old Colony Envelope Company, Westfield, Mass., has been advanced from Associate to Active membership.

John E. Bauman, foreman, Kalamazoo Vegetable Parchment Company, Parchment, Mich., is a 1930 graduate of Western State Teachers College.

O. Baker Beyer, Acting Manager, Hudson River Mill, International Paper Company, Corinth, N. Y., is a 1917 graduate of Pennsylvania State College and was formerly technical superintendent of the Newfoundland Power and Paper Company, Cornerbrook, Nfld.

Fritz E. Brauns, Research Assistant and Instructor of Organic Chemistry, Institute of Paper Chemistry, Appleton, Wis., received his Ph. D. from the University of Berlin in 1915. Dr. Brauns was formerly Research Chemist for Konigsberger Zellstofffabriker and Zellstofffabrik-Waldhof, Mannheim, Germany and the Dept. of Cellulose Chemistry, McGill University, Montreal.

Harry A. Chuse, Plant Engineer, Berst-Forster-Dixfield Company, Plattsburgh, N. Y., is a 1903 graduate of the University of Illinois and was formerly with the Forest Products Laboratory, Madison, Wis. and the Beloit Iron Works, Beloit, Wis.

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Lithography on Coated Paper*

By Robert F. Reed[1]

Abstract

The use of coated papers in offset lithography has increased during recent years because improvements in lithographic printing plates and inks have made possible improved printing in a minimum of colors, for which coated papers are particularly suitable. Certain characteristic difficulties are encountered in lithographing on coated papers. These are: (1) picking and peeling of the coated surface, (2) setting-off of the printed impression, (3) curling of coated-one-side papers, and related register difficulties, and (4) the tendency of some coated papers to cause scumming of the plates and "wearing away" of the work. While there have been definite improvements in coated papers there still remains certain research work to be done toward elimination of these difficulties.

Prior to the advent of the offset press printing of fine halftones required the use of very smooth surfaced papers. Coated paper had been developed primarily to make possible high class printing from halftone process blocks. In direct lithography from stones and metal plates it had also been found that smooth rendition of halftones required very smooth-surfaced papers, and for this reason large quantities of coated paper were used in lithography.

With the invention of the offset press it became possible to print fine halftones on papers having soft or rough surface textures, and the scope of pictorial printing was greatly enlarged. Offset prints, especially in colors, were novel and attractive because of their softness in contrast to the "hardness" of prints on coated paper. Part of this softness was due to the paper surface, and part to the lack of sharpness of the offset dot and the fact that less ink was transferred to the paper. This soft quality was considered desirable in color printing in which the lithographer used six or more colors, but was not so suitable for four-color and monochrome work as these usually lacked snap and vitality.

Recent developments in offset printing plates and inks have made it possible to transmit more ink to the paper and to obtain printing density and definition by the offset process approaching that of letter-press printing. The quality now obtained enables the offset lithographer not only to produce better printing on soft and rough-surfaced papers but to do very creditable monochrome and four-color work on supercalendered and coated papers. At the same time economic conditions have forced the reduction of costs wherever possible, with the result that the number of printings in color has been reduced to a minimum. Four-color offset lithography now is the rule rather than the exception. Because the most attractive results with the fewest printings can be obtained on smooth-surfaced papers, the trend in recent years has been away from rough finishes and toward highly calendered and coated papers.

A few years ago, many lithographers avoided the use of coated papers wherever possible because of characteristic difficulties encountered in printing them. The principal troubles consisted of picking of the coating, setting-off, curling, wearing of the plate, and scumming. These troubles were not a serious drawback in the days of direct lithography, principally because of the low speeds and relatively short runs, but they became a handicap of considerable magnitude in offset lithography with its rubber blanket impression, and its high speeds and longer editions. However, there seems to have been a material decrease in the coated paper troubles of the lithographer during the last few years, evidenced by the increased use of coated papers in offset lithography, and fewer complaints. This change no doubt has been brought about through improvements in the manufacture of coated papers resulting from a better understanding of their use requirements, and through an improvement in technique on the part of the lithographer. Laboratory tests on commercial coated papers indicate a definite trend toward the elimination of some of the faults which formerly were common. All of the above-mentioned difficulties in lithographing on coated papers still persist in some degree and further research in the direction of their elimination is desirable.

Picking and Peeling

The forces which cause picking and peeling of the coating are more intense in offset than in letterpress printing because of higher speeds, thinner ink films, and the presence of moisture. The rubber blanket sometimes causes picking of the coating in the unprinted areas when the blanket becomes tacky. Improvements in blankets to obviate their tendency to become tacky are needed. However, from the standpoint of coated paper manufacture the problem of picking of the coating in the printed areas of the sheet is the important one.

Tack is the resistance of the ink film to splitting which occurs when it is transferred from the printing surface to paper. Contrary to the belief of some, the ink film on the printing surface is never transferred completely to the paper surface, but divides itself between the two surfaces in a thickness ratio dependent on the permeability of the paper surface. Therefore, tack is a property of the ink and not of either of the surfaces involved. Tack increases with the speed of printing and decreases slightly as the thickness of the ink film is increased, within printing limits. For these reasons coated papers which are entirely satisfactory for direct lithography or letterpress printing may show a tendency to pick on the offset press. Offset inks when printed usually contain moisture, the amount depending on the coverage of the plate and the amount of ink carried. In some cases the moisture content of the ink may be as high as 25 per cent. This moisture tends to soften the coating and to weaken its bond with the body stock. However, moisture absorption during printing does not seem to be a serious cause of picking or peeling unless the plate is dampened excessively.

When picking takes place the pressman usually attempts to reduce the tack of the ink until the picking ceases, but there is a limit to this remedy. A relatively stiff, short ink is required to yield a dense, snappy impression on coated paper, and reduction of the ink lowers the quality of the impression. Another remedy is that of reducing the speed of the press but this in turn increases the cost of printing. The principal limitation in the attainment of quality and economy in lithography is the lack of standardized tests for ink-paper relationships. The graded wax test appears to be in most general use. A comparative

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method described by A. J. George *(1)* consists in passing an inked roller over two paper samples, and possesses the advantage that it simulates the printing operation. This method might conceivably be standardized as to dimensions of paper sample and inking roller, consistency of ink for the specific printing method to be used, and speed of rolling to correspond with the speed of the press.

Setting-off of Inks

Setting-off of the ink is the result of two factors: impermeability of the paper surface to the ink, and consistency of the ink which includes its ability to set quickly after the impression. Short inks set more rapidly than long inks and this accounts for their preference in printing on coated papers. A certain degree of permeability of the paper surface is desirable as penetration of the ink vehicle to some extent is necessary for rapid setting of the ink. The problem of setting-off must be solved by research on both paper and ink, and by the development of suitable tests that can be applied both by the paper maker and by the lithographer. The instrument for measuring the power of absorption of the paper surface, designed by Bekk *(2)*, appears to be a development of importance in this direction.

Curling and Register Troubles

Curling of coated-one-side papers is a phenomenon directly related to two-sidedness. Since the coated side tends to change its dimensions uniformly in all directions with changes in relative humidity while the uncoated side tends to change in the cross direction more than in the machine direction, it is theoretically impossible to make a sheet that will lie flat throughout the entire range of relative humidity. The best that can be done is to determine as accurately as possible the atmospheric condition under which the paper will be or is likely to be printed and to make the paper so that it will lie flat under this condition.

Curling of paper is a serious lithographic problem as it involves loss of time because of feeder trouble and also tends to produce misregister in color printing. Because coated-one-side papers give more curling trouble than uncoated papers, there is objection to them.

Coated litho paper offers somewhat greater difficulties in obtaining register than uncoated papers because their expansion or contraction per unit change in moisture content is, on the average, greater than that of uncoated papers. Recent tests by the U. S. Bureau of Standards *(3)* showed an example of a coated-one-side litho paper that had an average coefficient of expansion approximately 50 per cent greater than that of machine-finish and surface-sized offset papers of approximately the same weight. Coated papers are therefore more prone to develop wavy edges than uncoated papers and to cause register troubles because of this. The only way to overcome this handicap seems to be the attainment of greater precision in the conditioning of coated papers prior to printing.

"Scumming" and "Wearing" of the Plate

Another complaint more or less commonly heard from lithographers is that coated paper sometimes causes scumming of the printing plate or wearing away of the work. The true causes of these difficuties are not yet thoroughly understood, and diagnosis in any individual case is not altogether certain. For a long time it was assumed that lithography was operable because "grease and water do not mix." It is now understood that lithography depends on the formation of a stable water-in-oil type emulsion *(4)* and that the introduction of any condition which favors an oil-in-water type emulsion renders clean lithography impossible.

The presence of excessive alkali in the paper causes both scumming of plates and "wearing" or "blinding" of the work. In this case scumming is due (1) to removal of the absorbed gum arabic film on the non-printing areas of the plate, thereby permitting absorption of the fatty acids of the ink vehicle, and (2) to formation of soaps by reaction of the alkali with the acids of the ink vehicle, a condition which favors reversal of the water-in-ink emulsion normally existing. At the same time "wearing" or "blinding" of the work on photolith plates may be caused by swelling of the albumin base of the printing image *(5)* by the alkali until it loses its ability to retain ink. Reversal of the water-in-ink emulsion undoubtedly contributes to "wearing" of the work by reducing the cohesive power of the ink, and this is probably the explanation, in some cases, of the "wearing" of hand-transferred and deep-etched plates in which the image has no albumin base.

The alkalinity of coated papers, however, is not the major cause of scumming and wearing of plates because few clay-coated sheets show pH values above 7.0, and few papers containing satin white show pH values above 8.5. The latter can generally be run successfully on the offset press by slightly increasing the acidity of the fountain solution to overcome the effect of their alkalinity. The introduction of pH control of the fountain water in lithography makes it possible to adjust acidity of the solution to balance the alkalinity of the paper, and, if practiced to a greater extent, it would probably eliminate many complaints on this score.

The Major Cause of Scumming

The major cause of scumming and "wearing" of plates in lithographing on coated papers still seems to be the presence in the coating of water-soluble polar substances which tend to destroy the stability of the normal water-in-ink emulsion. A method of detection of polar substances in coated paper has been proposed *(6)* in which the water extract of the paper was tested for its foaming tendency or for surface tension depression on the assumption that these effects were directly related. It has been subsequently found that there is no close correlation between the abilities of different polar substances to depress the surface tension of water and their abilities to produce foaming or to stabilize emulsions. A strong foaming tendency may sometimes be observed when the water extract of a coated paper has a surface tension as high as 50 dynes, while the extract of another paper may have a surface tension as low as 36 dynes and show only a weak foaming tendency. It has also been found that scumming of lithographic plates bears a closer relationship to the foaming tendency of the water extract than to its surface tension depression. A coated paper, the extract of which shows a strong foaming tendency but a relatively high surface tension, may produce scumming by reversing the water-in-ink emulsion, while another coated paper, the extract of which shows a weak foaming tendency but a relatively low surface tension, may cause no trouble whatever. This is in line with observations on the effect of surface plasticity in stabilizing emulsions. At the present time it is considered that the foam test on the water extract of a coated paper, made in comparison with a paper of known printing quality, is the best laboratory indication of its tendency to cause scumming of the lithographic plate.

Summary

It appears that research with the object of improving the printing qualities of coated papers should logically be carried on in four directions: (1) the development of re-

liable tests for picking and peeling of the coating, and determination of the relation between printing speed and the requirements for coated paper to resist picking and peeling; (2) the development of a method of measuring the absorbency of the coated surface for lithographic ink, and investigation of the relation between absorbency and the rates of setting of inks of different consistencies; (3) investigation of the factors that determine the range of moisture content within which coated-one-side papers will lie flat, and methods of controlling these factors; and (4) investigation of constituents of the coating with regard to their ability to cause scumming and "wearing" of lithographic plates, and the elimination of undesirable constituents.

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The Paper Maker and the Graphic Arts*

By John F. Vance[1]

I deduce from the name of your organization (The Graphic Arts Committee of TAPPI) that your interest in paper is specialized. That is to say, you are interested in the papers which are used for printing. Accordingly the things that I have to say this afternoon cannot apply except by accident or analogy to other branches of the paper industry—branches in which your interests are secondary and about which my knowledge is scant. Printing papers are the only important papers anyway—the only papers for which there are no practical substitute materials.

There must have been a reason for organizing this Graphic Arts Committee. I think it must have been that the Technical Association of the Pulp and Paper Industry has recognized the existence of an important problem common to all of you. That problem is the thing about which I wish to talk this afternoon. Mere recognition of that problem indicates that you paper makers have the same sort of vision as that which led scientists and navigators in the Fifteenth Century to recognize the possibility of a westward passage to India. But recognition of the problem or the possibility is never enough. Just as it required a Columbus to correlate the hunches and prognostications of other inquisitive men and find a sponsor with a practical mind and means to underwrite his project, so the problem which faces you requires correlation and investment and practical effort if the solution is to be found.

It is true that Columbus did not find the passage to India which he was looking for. He found athwart his path two continents bulging with wealth for his sponsors —a sort of unearned dividend incidental to the westward voyage from Spain to India which Columbus never completed but for which he blazed the trail.

Let us first state the problem which has called forth the organization of this committee: It is, briefly, to find a way in which a tremendous and heterogeneous group scattered all over our broad land can be welded together and taught the principles of teamwork in order that the final result of their common endeavor may be more satisfactory to themselves and valuable to their customers. For after all, paper men, printers, ink manufacturers, printing machinery manufacturers, photographers, photo-engravers, type founders, and all their related craftsmen are engaged in a single and tremendously important business: the business of disseminating ideas.

The size of the group and the multiplicity of its interests and occupations is not fully suggested even by this list. The term paper men, although we have already limited it to the field of printing papers, nonetheless is wider than book papers and coated papers. It must obviously include cover papers, box board and other products of the paper mill manufactured to be printed upon. And the printer must not be limited in our conception of him to the most frequently encountered type. We must include the lithographer and the intaglio printer and that whole large clan of cousins in various specialized processes such as aquatone, coleotype, water color, wood block, rubber plate, silk screen, and stencil methods which are used to enliven and enrich the appearance of books, posters, magazines, mailing pieces, greeting cards.

I imagine most people intimately connected with the printing crafts were as surprised as the Code Authority of the Graphic Arts itself to learn that the Metropolitan district of New York contained something more than 2,700 plants engaged in the business of printing. This was true in spite of the fact that the NRA Code was not even dreamed of until after the much publicized movement away from New York had left Manhattan with only two or three plants sufficiently large to be considered as potential printers for periodical publications of any size, and until after a considerable amount of book manufacture had been transferred to the hillbilly country.

The Department of Commerce which does not include in its census establishments doing less than $5,000 worth of business in a year, reports more than 30,000 plants engaged in this business with considerably more than a half million wage earners collecting approximately one billion dollars a year in wages.

This huge business is a new business compared to that of the farmer or the sailor or the warrior. The printer is a young and revolutionary figure in the history of civilization. And taken in the aggregate the printer is a Frankenstein creature who made himself and created his own problems without the aid of Frankenstein. When Baron Say was condemned to death at the height of Jack Cade's rebellion, it was because he was found guilty of the charge thus paraphrased by Shakespeare in his King Henry VI:

"Thou hast most traitorously corrupted the youth of the Realm in erecting a Grammar School; and whereas, before, our forefathers had no other books but the score and the tally, thou hast caused printing to be used; and contrary to the King, his Crown and dignity thou hast built a paper mill. It will be proved to thy face, that thou hast men about thee, that usually talk of a noun and a verb and such abominable words as no Christian ear can endure to hear."

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Whether Baron Say could have brought printing to England at so early a date is a problem for the antiquarian. But there is no doubt that during the next century the business which is now the printers' did not exist. As a matter of fact any endeavor which smacked of dissemination of ideas was quickly and vigorously curbed. Knowledge and the recorded word were the sole possession of the cloistered priesthood. And this conception of things changed just as slowly as old fashioned ideas change today.

A Modern Problem

So it is that the problem which you have recognized is a problem born in modern times and it therefore calls for a modern and intelligent approach. It is because the approach to the problem has so frequently been neither entirely modern nor fully intelligent that it has not yet been solved, and I commend to your serious consideration the thought that whereas other phases of paper technology have their own problems which seem large when considered alone, their problems are insignificant compared to the problem which confronts your group. Indeed, the soultion of those other problems must await the solution of this one. For in this amazingly complex world we live in, in spite of the radio, the telephone and other methods of communication, we still depend principally upon printing for the dissemination of ideas, even such ideas as are incorporated in paper contracts. Yes, the solution of the problems confronting other branches of the paper industry, and of all industry and science and human relations in general, will await the solution of yours.

However, having thus emphasized your importance in our current scheme of things, I must remind you again that you collectively, your entire section of the paper industry is only one factor of the problem, an x or a y on the west side of the equality sign. Let us set it down as they do in the algebra books: Artist plus writer plus machine manufacturer plus ink manufacturer plus paper maker plus type-setter plus photo-engraver plus electrotyper plus printer, equal one. In other but equivalent terms it may be stated: Picture plus manuscript, plus ink, plus paper, plus type, plus engraving, plus electrotype, plus labor equals the printed job. And just as the chain of the old saying was no stronger than its weakest link, so no printing job is any better than its poorest element.

To hold this opinion of the importance of the paper industry is not to hold it in low esteem. It is a conception which must inevitably exalt the business of making paper; a conception which will give every worker a feeling of increased pride and satisfaction in his job. And I am not speaking now in the phrases of the pep talker. The manufacture of paper for printing purposes is a sufficiently exciting and rewarding craft to require no ballyhoo artists to sell it to its own representatives.

Need for Realistic Rather Than Scientific Approach

Now in connection with your problem I want to point out first the need for a *realistic* rather than a *scientific* approach to its solution. The two methods or attitudes are not mutually exclusive. The scientific approach is a very important phase of the realistic approach. But the scientific approach in itself is not enough.

I sense in my contacts with representatives of the paper trades the existence of a divergence of opinion on the value of scientific research in the paper mill. And it cannot be disputed that there are cold facts to support the contention of the apostle of the old rule of thumb as important as any which the believer in pure science can muster. For example, it is perfectly true that beautiful papers have been made for generations by men who have not for a moment considered the possibility that physics and chemistry have anything whatever to do with the craft of paper making. Papers have been made with virtually no other equipment than a spoon and a kettle and a sieve, which on the grounds of sheer beauty, serviceability and general high quality have never been equaled by the most elaborate machine operating under the most careful and complete controls.

Nobody endeavors nowadays to sell paper produced in such circumstances, but I am sure that the trade has in it men who feel strongly and sincerely that the further we move away from the old vat methods the more the craft of paper making will suffer. In an age when the mere use of the word science is enough to elicit reverential attention, quite obviously the believer in the old order is a little timid to suggest that it was better. He can, however, and frequently does, point out that research costs money. Phi Beta Kappas even at three or four thousand dollars a year are expensive accessories for machines already too expensive, and from his glossary of black magic he culls and tosses in the direction of the customer the cabala of overhead and its attendant bogies in an endeavor to demonstrate that if fifteen cents of the customer's dollar goes for pure science there will be only eighty-five cents left for paper and freight. And with the customer who must get a dollar's worth of paper for every dollar he spends this argument must carry some weight.

Paper, An Element of Printing

On the other hand, the paper research genius, has equally convincing arguments. "It may be true," he will say, "That the waters of the Merrimac or the Kennebec or the Columbia, or even the good old Suwannee are better for paper making than those of the Mississippi or the Red River of the North. But it is high time that we knew why this is true. If H_2O plus X makes better paper than H_2O plus Y by all means let us find out what X is. If only to be able to tell how much the proportion of X declines when the river is diluted by spring rains or adulterated by industrial waste." Or he may say, "For so many dollars or in such a length of time I can produce a compound which will give us the kind of paper which my Mullen tester and my glarimeter and all the rest of my fine instruments tell me we should have."

Making Paper To Print On

Neither one of these attitudes is rational in the practical meaning of that term. For it cannot be too frequently stressed nor too heavily underscored that you men are in the business not of making paper as paper, but you are in the business of making paper as something to print on, as one very important but still only one element of a printing job. And I am one paper buyer who does not care in the least what you make it out of, how fast the web travels along your machine, at what point it pops on your Mullen tester, or what its factor of opacity is according to some delicate instrument in your laboratory. What I want is a paper so ideally adapted to the purposes for which I must use it that no reader of *Fortune* will ever be conscious of it as paper. You men who have come to this meeting from a distance attached no importance to the make or color or horsepower of the locomotive which pulled your train. When you bought your ticket you purchased transportation, comfortable and rapid transportation. And printing, of which paper is a part, is no more a tangible thing than transportation.

I would like to suggest this afternoon that you from your angle and I from mine are each servants of civiliza-

tion's most modest art. We have succeeded in our task only when our work is completely submerged and lost sight of in the larger, more important and completely intangible whole of the well-printed job. If you as paper makers can break the bad habit which some of you unquestionably have of considering paper as something absolute, something that exists in its own right, and substitute for it the feeling that you are contributing an indispensable element to printing, and if we together can convert the other collaborators in the field of printing to this altogether idealistic point of view, then we will have arrived, paradoxically at the realistic, the rational approach to the problem.

An Interesting Demonstration

Do not misunderstand my attitude toward the scientific, the purely scientific approach to the business of making paper. It is of extreme importance, and there can be no doubt that every significant improvement in paper manufacture that has come from within the industry in recent years has come out of the laboratory. But it is possible to warp the individual or corporate mind by research for its own sake. I had an interesting demonstration of the workings of the brain of an extreme scientist on a recent visit to a New England paper mill. The scientist and I were being entertained at dinner by some mill men, among them a man who had grown up in the mill and the town around it who entertained us with down-east humor the greater part of the evening. He told us about a feud that existed years ago between two sections of the town which were separated by the stream which supplied the water for the mill.

This feud, as most feuds do, would rise to a crescendo of violence and then subside to an even level of mutual tolerance which would last until the peace was broken by one side or the other. During the periods of hostility it was extremely unwise for a member of either clan to cross the bridge into the territory of the other. Our friend of the evening was telling us of his own prowess when a young blood and the disdain he had for the threats of the young men at the other end of the bridge.

"One night," he said, "I allowed I'd have some fun so I walked across the bridge and hollered 'come on, any six of you' and with that I put a chip on my shoulder—."

At that point of the exciting narrative my scientific friend intervened and said, "You put a chip on your shoulder?"

"Yes sirree."

"Was it sulphite or soda?"

That, I think, beautifully illustrates the attitude of the man dedicated to science for science's sake. And it is important, for it is this painstaking type of man who will discover the facts about water and pulp and filler which you must sooner or later apply. But until he emerges from his laboratory with his facts already found his problems are his own. And quite independent from yours.

So, I think, we can leave the scientist for the moment in his laboratory, dismissing him from the immediate picture but not losing sight of the importance of his contribution to the ultimate solution of your phase of the printing problem.

Leaving him there, let us look for a moment at the other extreme of attack. Let us in fact go into a press room where for some reason, or reasons, unknown a printing job has run amok. The customer may or may not be there muttering dispairingly in his beard. The pressman and his foreman will certainly be there explaining that they have already done everything they know how to do to threaten or cajole or otherwise induce the malevolent Miehle monster to lay down at the delivery end a sheet of paper printed as the customer wants it. These are the characters on the stage when the scene opens. The printer is sure that he is not to blame for whatever has happened. He thinks it may be the fault of the paper man and has sent for him. The paper man enters, irritated and on the defensive, wanting very much to call the printer all the slanderous names his vocabulary includes, but not daring to in the presence of the customer. He picks up a sheet of paper, tears it with the grain, across the grain, licks it, licks his thumb and bears down on it, looks through it at the light and then sits down on the nearest table or stool and gives an imitation of Rodin's *Thinker*.

He emerges from this brown study after a few moments with a new verdict. He agrees that the printer has done his best. He has convinced himself that the paper is all right. The logical deduction at this point is that the ink man is the corrupting influence and he is called in consultation. When he arrives he goes through his own particular antics, probably beginning by transferring a small blob of ink to a piece of blank paper and tapping it meditatively with his middle finger. After this, he usually goes over to the press instead of climbing up on the table and does his thinking standing up. The situation is pretty complicated by this time because the field of candidates for responsibility has been narrowed down to the photo-engraver, and inasmuch as cuts on the form have been supplied by a dozen different photo-engravers with shops scattered from Boston to San Francisco, it is a little difficult to put the finger on all of them. Somebody, however, is able to produce a gadget which will measure the depth of etching between the dots and each person present has a linen tester in his pocket so that the printed result may be examined in high magnification.

Sometimes this one-act play ends with a decision that the photo-engravers are unquestionably to blame for all the trouble. Sometimes the decision is that they are not to blame either. But no matter which ending is used, the cast and audience disperse with a feeling of dissatisfaction, because they surmise that the nameless god or demon who presides over the destinies of the printing trades is suffering from another attack of indigestion and is expressing his ill-humor in a most inconvenient way. This is a scene so familiar to all of you either by observation or by report that it scarcely needs description here. But it is another example of an approach to the printing problem which is not realistic. As a matter of fact this approach belongs to a category not heretofore mentioned. It is not the old rule of thumb approach. It is certainly not the approach of the scientist. It is more accurately described as the cockeyed approach because it wastes so much time and accomplishes no good.

A Realistic Approach to the Problem

With so many examples of the incorrect approach and so much elaboration of the thought that the problem is big and the situation confusing, let me now describe a few examples of the realistic approach to the printing problem:

Nearly ten years ago the Graphic Arts Committee of the American Association of Advertising Agencies and the American Institute of Graphic Arts between them selected a council of experts to reduce the number of color combinations used in the reproduction of four color process art, particularly in the field of advertising. This committee was wisely selected. Its membership comprised men familiar with color and the problems of color printing and with a sensible attitude toward the minimum require-

ments of satisfactory inks. The inks must be selected in series which would satisfactorily span the spectrum. They must be reasonably resistant to the fading influences of light. They must be available at a commercial price, and they must be compounded of materials regularly and uniformly available. With the result of their study we are all familiar. The quality of four-color reproduction, particularly in magazines, was greatly improved, immediately engravers, publishers and printers began to cooperate in the use of the so-called "standard process colors." However, the victory was not complete. Photo-engravers, of whom too many are still more interested in selling acceptable proofs than printable plates, were not uniformly successful in persuading their operators to use the inks exactly as they came from the ink maker. Ink makers at the same time were working under controls which were not absolute, and there were and still are variations in color, tack and fading qualities which will upset the best laid plans of publisher, printer and engraver. Paper men were unable to maintain absolute standards in the manufacture of their papers. Thus, on this occasion the realistic approach, while it accomplished much in the improvement of color printing was not wholly effective because an insufficient number of people cooperated in the attack.

Another conspicuous example of the intelligent or realistic approach to an abstract problem of great importance to the printing industry was that of the late A. H. Munsell. His attack upon the problem of color might well serve as a guide-post for anyone interested in the extremely complicated problem which confronts the Graphic Arts. It must be, he reasoned, that color can be described in understandable terms. There must be some way of measuring its intensity and hue and all its characteristics. You will note that his approach was not from the angle of what is the matter with this color; why does it not match the sample? He knew from practice and observation that the solution of each minor difficulty as it arose did not provide any standard of practice or measurement. And as you all know he evolved a system of notation for color as specific as that used in music, and so simple that it is quickly grasped by anyone with normal color perception.

The Development of Fortune Magazine

It may be interesting to examine here the approach which was made to the original problem of *Fortune*, not because it was exactly right in every phase, but because a serious endeavor was made to foresee all the difficulties which would arise in production, and to provide in advance a method of producing the magazine as conceived by the publisher. The project was first discussed by the publisher and his printer and a careful outline of the project was made. These two parties agreed then it was time to consult a designer and T. M. Cleland was called in. The project as presented to him was to design a magazine of unusual beauty which would be printed in such a way as to give the best possible quality to reproductions of all types of artwork. Actual format was not much more clearly specified than that it should not be of such dimensions as to squeeze and crowd the pictures and type. Mr. Cleland submitted to the publisher at length a design for the book which went beyond sample type pages and a set of measurements. He recommended a process for reproduction of illustrations which was entirely new to the magazine field in the United States and proposed a type of paper quite as revolutionary when used in connection with that process. At that stage of the development sample copies were run to test the desirability of the technique which Mr. Cleland had suggested. Those sample copies provided a starting point for newer trials. Over a period of several months of frank experimentation the magazine began to take shape and develop the character for which it has become known. In September, 1930, *Fortune's* famous Volume 1, Number 0, appeared in an edition limited to a few dozen copies, and on the basis of that original design as developed in this dummy issue *Fortune* has now produced over 70 issues with no major problems of manufacturing except those created by the growth of circulation, which has exceeded many fold the most optimistic expectations of the men associated with the magazine in its early days.

Another Example from Fortune's Experience

This suggests to me another example from *Fortune's* own experience, because of the printing problem created by *Fortune's* rapid growth. A year and one half ago it had become apparent that we would very soon need to increase the intaglio press capacity in *Fortune's* printers' pressroom. As you all know, American printing machinery manufacturers have no peers anywhere in the world except in the field of sheet-fed intaglio. For reasons which are not clear to me, this type of machinery has never been very highly developed in the United States, and it is only within very recent years that any practical developments have been undertaken. The presses on which *Fortune* undertook the publication were specially made in Europe, where for generations engineers and press builders had steadily improved their machines. But the maximum which these presses could produce for us was in the neighborhood of 1,000 or 1,200 impressions per hour in eight-page forms. Competing press manufacturers in Europe had developed sheet-fed intaglio presses in a variety of directions and it seemed necessary to inspect each of them. But there were no American installations. Accordingly, it seemed wise to go to Europe, taking along a sufficient supply of our own paper for actual press run tests on each type of machine. The paper was heavy, the press building factories far from the main traveled roads of tourists. But on a six weeks' pilgrimage from Paris to Czechoslovakia with many twists and turns we found a press still in its embryonic stages which would print our paper at the phenomenal speed of 5,000 impressions per hour at a standard of quality at least as high as we had ever reached on our slower equipment. A considerable amount of redesigning was required for our special purpose and it was not until the fall of last year that the press we wanted was complete and it was not until the issue of *Fortune* which is being mailed this week went into production that we were able to use this press in production. The continued growth of *Fortune* has created new problems which are in the early stages of their solution, but for which we expect to have a solution before they become acute.

A Rule for the Graphic Arts in General

At this point I think we may lay down a rule for the Graphic Arts in general, which has been exemplified by the color standardization committee and Mr. Munsell and which we have tried to follow in the Production Department at *Fortune*. The first requisite of the realistic approach is to identify and outline the specific problem the instant it can be spotted on the horizon, correlate all the factors of it and try to have the solution ready when it is needed.

There are persons and organizations at work today

on the same intelligent basis. The chairman of your committee represents a company which has done notable work in its own sector of the Graphic Arts field. And there are several paper companies represented in this group this afternoon, each of which in its own way is doing a constructive job in the establishing of controls and standards which will increase the quality and uniformity of its product.

From the experiments of these various agencies we will all learn eventually. But even when the individual person or company has perfected his own standards and controls, the printed job runs today too much at the mercy of wind and rain and other variables which have not been adequately studied at the point where the effect is felt. Therefore the problem still remains. How then shall it be approached from the paper maker's angle?

A Few Don'ts for Paper Salesmen

In the first place a few don'ts in the business of your approach to the customer. Because as a matter of actual fact he is concerned in the problem too. Most of these don'ts relate to the old misconception that paper for printing exists in its own right.

First, don't insist to any customer that blue-white, for example, is the best color for white paper. That is not true. It cannot be true. No shade of white paper can be arbitrarily declared to be better than any other. The best color can only be determined by taking into consideration the nature of the work which is to be printed on it, and the taste of the customer who is buying.

In the second place, don't insist, for example, that supercalendered paper is better than English finish for printing gravure. That again is a thing which can be determined only when all the facts of a given job are taken into consideration: length of run, desired effect, depth of etching, type of ink to be used, and a myriad of other concerns.

Don't, for another thing, insist that "green" paper will not print. Sometimes it will. Sometimes it will print better when green than when seasoned.

Don't in fact try to tell your customer what he wants before you know what he plans to do. Rather than that, examine his problem with him in its broadest terms, and with him find out what he wants. It is almost certainly true that neither one of you know what is the answer to the specific printing problem under consideration until after you have studied it at some length together.

Seeking the Best Way

Now what is the best way to do that? The best way probably will not ever be found on this planet. That is because it requires the development of a high-minded Soviet of printing. Call it a Soviet because it must be an organization not organized for individual profit but for mutual and equal benefit. Let us call it a Soviet this afternoon so that we understand that what is needed is not the type of trade association with which we are familiar, nor a chain of related research laboratories duplicating each other's effort, and leaving some important fields entirely unplowed.

In that superlaboratory you will find out what combination of materials is best for any given type of printing job. There you will establish controls and will determine methods for maintaining standards not only in the manufacture of paper but in the use of paper under actual printing conditions in terms of ink and engraving and presses. It is important for you to know all there is to know about all the related printing crafts, and it is essential for all of them to know as much as you do about your business. For example, you may know what effect paper machine web speed will have on printing quality. But does the printer? Have you told him? It probably has never entered his head to ask.

But we don't live under a Soviet system. It does not seem in 1936 to be compatible with the American idea, so although this was only a theoretical Soviet, it is probably as impractical as a political Soviet, and I have led you off on an idealistic tangent far from the realistic approach.

Use Requirements of Printing Papers

But there remains a way—an adaptation of the foregoing on a less efficient basis, a more expensive basis per job. But you will get the right answer. And each step taken along this path will approach the answer and improve the quality of printing.

Let us describe this method by example and then I will have finished. Let us assume that a publisher has determined to issue a new magazine. It is clear in his mind what the nature of that magazine will be. In this decade, it will probably be quite heavily pictorial. He will have decided that it must sell for so and so much per copy if it is to appeal to the subscribers he hopes to reach in the quantity he hopes to sell it. There will come a time when he has material ready for the dummy. At that point he should call you in. And at that first conference you should find out from him everything you can about the physical aspects of his project. To find out these things will require some tactful probing and convincing explanation on your part that you want honestly to help develop his project quickly, intelligently and economically. When you have all the available information proceed at once to consult everyone concerned. Do this before you tell your customer what he wants. You do not yet know what he wants and neither does he. Consult his printer. Consult his ink maker. Consult his photo-engraver, electrotyper, everyone concerned, even the publisher, as often as the problem requires, for publishers have budgets and magazines cannot be published without them. Determine the printability not of one paper, but of a half dozen similar papers within the price range and quality classifications which best meet the publisher's requirements. Consider his production schedule, the weather conditions prevailing in the printing plant, determine the proper depth of etching, consider the color rotation which he will use on his color pages, the trapping problems and tack of the ink he proposes to use, the desired bulk of his magazine, the amount of finish on the paper, method of folding and binding. Take in other words the same type of pains and the same amount of pains that you would take if you were building a house. Consider all the specifications and materials with the greatest care and make sure that they will hold together under the stresses to which they will be subjected. I have an idea that every publisher who is honestly concerned with printing quality will welcome this type of assistance. I have an idea that all the other craftsmen who will be your collaborators in the production of this hypothetical magazine will welcome the assistance. Its one drawback is that the same road must be traveled each time a new printing project develops. But dissatisfaction with the finished product, and hence dissatisfaction with your part of it—the paper on which it is printed —is less likely to follow.

And you will keep your paper contract longer. Or perhaps not even need a contract.

Pulp and Paper Industry Literature Review

Abstracts of Articles and Patents Compiled by the Abstracts and Bibliography Committee of the Technical Association of the Pulp and Paper Industry, A. Papineau-Couture, John F. Ohlson, C. E. Peterson and Clarence J. West, Chairman

Copies of United States Patents can be obtained from the United States Patent Office, Washington, D. C., for 10 cents each. Send currency, not stamps.

Coating and Filling Machine

Apparatus for Coating Paper. William J. Montgomery assignor to The Champion Coated Paper Co. U. S. pat. 2,009,631 (July 30, 1935).—The invention provides an apparatus for carrying out the paper-coating method of Bradner's U. S. pat. 1,838,358 of Dec. 24, 1931. The essential feature resides in a special drive for the doctor roll, whereby a constant relation of the nature D = bA + c (in which D and A are the doctor and web speeds, and b and c are constants) is maintained between the speeds of the doctor and web, irrespective of variations in the latter.—A. P. -C.

Method of Producing Moistureproof and Air Tight Coatings. Wilhelm J. H. Hinrichs and Hermann Wittkowski. U. S. pat. 2,003,191 (May 28, 1935).—Various articles, including wallpaper, are coated with a latex solution prepared by concentrating latex in a rapidly rotating centrifuge, washing with ammonia-containing water, freeing from hygroscopic and decomposable constituents and diluting with water.—A. P. -C.

Gummed Paper and Method of Preparing It. Gardner R. Alden assignor to Dennison Manufacturing Co. U. S. pat. 2,001,049 (May 14, 1935).—A finely divided open pattern of a "resist" (*e.g.*, wax) is applied to paper. A substantially continuous layer of a liquid adhesive is applied on top of the resist, and after drying, the gummed paper is subjected to the usual "breaking" operation, which may be carried out under appreciably lower tension than when no "resist" is applied.—A. P. -C.

Composition for Coating Paper and the Like. Charles M. Boyce assignor to John R. Ditmars. U. S. pat. 2,003,065 (May 28, 1935).—A sheet of printed paper, cardboard or other fibrous stock is given a coating with a composition capable of forming a transparent film and containing casein in solution, or preferably both casein and gelatin. —A. P. -C.

Art of Coating Paper. Charles N. Cone and Earl D. Brown assignors to The Glidden Co. U. S. pat. 2,006,229 (June 25, 1935).—A vegetable protein obtained from oleaginous seeds (soy bean, cottonseed, peanut, castor, etc.), preferably after removal of the oil, by mildly alkaline extraction, is used instead of casein as coating adhesive.—A. P. -C.

Dull Finish Coated Paper. Donald D. Bradner assignor to The Champion Coated Paper Co. U. S. pats. 2,006,208 and 2,006,209 (June 25, 1935).—*No. 2,006,208* —Paper is coated with an aqueous coating composition consisting essentially of pigment and adhesive, at least part of the adhesive consisting of uncooked starch. The coated paper is dried and calendered, and the calendered coating is then slightly moistened, with or without final drying. *No. 2,006,209*—The process is similar to that of the preceding patent, except that pulverized cellulose is substituted for uncooked starch in the coating composition. —A. P. -C.

Pigmented Paper. Elwin C. Eide and John Henry Calbeck assignors to American Zinc, Lead and Smelting Co. U. S. pat. 2,006,016 (June 25, 1935).—To a boiling zinc sulphate solution of about 28° Baumé there is rapidly added a chemically equivalent amount of a boiling 38° Baumé sodium or ammonium thiosulphate solution (containing 300 mg. per l. of sodium sulphide to control particle size); the two solutions are vigorously mixed and alkali is slowly added to maintain the *p*H of the mixture constant. After completion of the reaction the precipitate is filtered, washed free from sulphates and incorporated in the moist condition to a paper furnish. Instead of precipitating the zinc sulphide and then incorporating with the pulp, the precipitation can be effected as above directly in presence of the pulp.—A. P. -C.

Coating Paper. Joseph H. Wood. U. S. pat. 2,001,339 (May 14, 1935).—In the manufacture of enamel-coated paper, after application of the coating the web is passed in contact with an equalizer, which consists of a roll or cylinder around which is a helically wound wire (with adjacent convolutions in contact with each other) and which is preferably driven in the same direction as, but at a materially lower speed than, the paper. The equalizer produces a series of uniform striations in the surface of the enamel, which, under proper conditions, equalize themselves by the flow of the enamel coating. —A. P. -C.

Sizing

Theories of Paper Sizing in the Light of the Bewoid Process. Bruno Wieger. Kunstdünger u. Leim 32: 81-85, 111-114 (1935); C. A. 29:6053.—The theory that formation of a semipermeable membrane is an essential step in the sizing of fibers is rejected both on theoretical and experimental grounds. Experiments, in which the lower ends of paper strips were immersed in Bewoid solutions, showed that the rosin diffused upward with the water except in the case of one strip which had been previously treated with a one per cent alum solution and dried. The treatment with the aluminum salt had so greatly weakened the normal positive charge on the fibers that negative rosin particles were no longer attracted with sufficient force to overcome gravity. Wieger favors the theory that the alum hydrate adhering to the fiber surface acts as a mordant which binds the rosin particles, provided the latter contain alkali resinate molecules on their surface. The purpose of sizing is considered to be decreasing the rate of wetting of paper fibers. The behavior, toward sizing, of fibrous cellulose material prepared in different ways is also discussed. When sized paper is dried too rapidly, the attendant undesirable results are explained, in some cases at least, as being caused by the loosening, by rapidly vaporizing water, of sizing particles from the fibers.—C. J. W.

The Use of Sizes in the Paper Industry. Contribution to the Question of Using Animal Size in Engine Sizing. Felix Noss and Wilhelm Goldlust. Kunstdünger u. Leim 32:86-89, 115-118 (1935); C. A. 29:6053. —A brief review of patents and literature.—C. J. W.

IMPORTS OF PAPER AND PAPER STOCK

NEW YORK, BOSTON, PHILADELPHIA AND OTHER PORTS

NEW YORK IMPORTS

WEEK ENDING MAY 23, 1936

CIGARETTE PAPER

Standard Products Corp., *Chaplain,* Havre, 34 cs.; H. H. Strauss, *Chaplain,* Havre, 350 cs.; Champagne Paper Corp., *Champlain,* Havre, 618 cs.

WALL PAPER

———, *Berlin,* Bremen, 2 cs.; ———, *Europa,* Bremen, 9 cs.; ———, *Champlain,* Havre, 4 cs.; Titan Shipping Co., *Stavangerfjord,* Oslo, 5 ctns.

PAPER HANGINGS

W. H. S. Lloyd & Co., *American Merchant,* London, 7 bls, 1 cs.

NEWSPRINT

N. Y. Tribune, *Markland,* Liverpool, N. S., 1605 rolls; World Telegram, *Markland,* Liverpool, N. S., 596 rolls; N. Y. Times, *Markland,* Liverpool, N. S., 241 rolls; Brooklyn Daily Eagle, *Markland,* Liverpool, N. S., 338 rolls; Standard Star, *Markland,* Liverpool, N. S., 460 rolls; Clinton Paper Corp., *Markland,* Liverpool, N. S., 486 rolls; N. Y. Evening Journal, *Norden,* Quebec, 3919 rolls; Perkins Goodwin & Co., *Berlin,* Bremen, 342 rolls; Jay Madden Corp., *Berlin,* Bremen, 474 rolls; Jay Madden Corp., *Sagoporack,* Kotka, 527 rolls; Daily Mirror, *Gausdal,* Port Alfred, Que., 849 rolls; N. Y. Post, *Gausdal,* Port Alfred, Que., 94 rolls; ———, *Gausdal,* Port Alfred, Que., 385 rolls; Gilman Paper Co., *Gausdal,* Port Alfred, Que., 281 rolls; ———, *Stavangerfjord,* Oslo, 296 rolls.

PRINTING PAPER

S. H. Pomerance, *American Merchant,* London, 2 cs.; Dingelstedt & Co., *Europa,* Bremen, 4 crates; L. A. Consmiller, *Europa,* Bremen, 40 cs.; Walker Goulard Plehn Co., *Sagoporack,* Kotka, 50 bls.

PACKING PAPER

A. J. Bullinger, *Volendam,* Rotterdam, 8 cs.

FILTER PAPER

H. Reeve Angel & Co. Inc., *American Merchant,* London, 2 cs.; H. Reeve Angel & Co. Inc., *Aquitania,* Southampton, 20 bls., 5 cs.

METAL COATED PAPER

K. Pauli Co., *Berlin,* Bremen, 14 cs.

BARYTA COATED PAPER

Globe Shipping Co., *Europa,* Bremen, 12 cs.

SURFACE COATED PAPER

L. A. Consmiller, *Europa,* Bremen, 23 cs.; Gevaert Co. of America, *Black Hawk,* Antwerp, 54 cs.

BASIC PAPER

Globe Shipping Co., *Berlin,* Bremen, 23 cs., 20 crates; Dingelstedt & Co., *Europa,* Bremen, 7 cs.

DECALCOMANIA PAPER

B. F. Drakenfeld & Co., *Scythia,* Liverpool, 15 cs. (duplex); B. F. Drakenfeld & Co., *Scythia,* Liverpool, 11 cs. (simplex).

DECALCOMANIAS

Sellers Transportation Co., *Berlin,* Bremen, 8 cs.; Sellers Transportation Co., *Europa,* Bremen, 7 cs.

TRANSFER PICTURES

Rohner Gehrig & Co., *Europa,* Bremen, 20 cs.

TISSUE PAPER

F. C. Strype, *American Shipper,* Liverpool, 12 cs.; B. F. Drakenfeld & Co., *Scythia,* Liverpool, 3 cs.

COLORED PAPER

J. W. Hampton, Jr. & Co., *H. Paspar,* Antwerp, 4 cs.

WRITING PAPER AND ENVELOPES

W. J. Byrnes, *Aquitania,* Southampton, 5 cs.

STRAW BOARDS

Balfour Guthrie & Co., *Volendam* Rotterdam, 198 pkgs.

MISCELLANEOUS PAPER

Steffens Jones & Co., *Kiyosumi Maru,* Kobe, 4 cs.; Moller Products Co., *Kiyosumi Maru,* Kobe, 9 cs.; Japan Paper Co., *Pr. Lincoln,* Kobe, 64 cs.; International F'd'g Co., *H. Jaspar,* Antwerp, 4 cs.; Keller Dorian Paper Co., *Pr. Harrison,* Marseilles, 4 cs.; Jay Madden Corp., *Berlin,* Bremen, 24 bbls.; Coty Processing Co., *Champlain,* Havre, 7 cs.; T. H. Hindle, Co., *Amagisan Maru,* Yokohama, 8 cs.; H. Reeve Angel & Co. Inc., *Amagisan Maru,* Yokohama, 8 cs.

BAGS, BAGGING, ETC.

S. Shapiro & Sons, *Kiyosumi Maru,* Kobe, 250 bls. rags; New England Waste Co., *Kiyosumi Maru,* Kobe, 300 bls. cotton waste; E. J. Keller Co. Inc., *American Shipper,* ———, 52 bls. bagging; ———, *American Shipper,* Manchester, 150 bls. bagging; Royal Manfg. Co., *American Shipper,* Manchester, 100 bls. cotton waste; ———, *American Merchant,* London, 248 bls. rags; Irving Trust Co., *H. Jaspar,* Antwerp, 22 bls. rags; ———, *Pilsudski,* Gdynia, 130 bls. rags; F. Stern, *Pr. Harrison,* Bombay, 109 bls. rags; W. Steck & Co., *Pr. Harrison,* Bombay, 83 bls. rags; ———, *Pr. Harrison,* Bombay, 200 bls. cotton waste; S. Shapiro & Sons, *Pr. Harrison,* Bombay, 120 bls. cotton waste; O' Brien Padawer Co., *Pr. Harrison,* Bombay, 300 bls. cotton waste; E. J. Keller Co. Inc., *Pr. Harrison,* ———, 117 bls. rags, 66 bls. paperstock; Great Eastern Packing & Paperstock Corp., *Volendam,* Rotterdam, 50 bls. bagging; Loumar Textile By-Products Co., *Volendam,* Rotterdam, 135 bls. bagging; J. Cohen & Sons, Inc., *Scythia,* Liverpool, 19 bls. rags; ———, *Gerolstein,* Antwerp, 111 bls. rags; D. M. Hicks, Inc., *Gerolstein,* Antwerp, 78 bls. flax pulp; Philadelphia National Bank, *Black Hawk,* Antwerp, 107 bls. bagging; R. Blank, *Black Hawk,* Antwerp, 140 bls. bagging; ———, *Black Hawk,* Antwerp, 29 bls. cotton waste; E. J. Keller Co. Inc., *Black Hawk,* ———, 117 bls. bagging; ———, *Sagoporack,* Gdynia, 73 bls. rags; Chase National Bank, *Sagoporack,*

Gdynia, 66 bls. rags; E. J. Keller Co., Inc., *Sagoporack,* ———, 55 bls. bagging; E. J. Keller Co. Inc., *Collaerm,* ———, 29 bls. paper stock; Commercial Bank of Greece, *Exmoor,* Piraeus, 163 bls. rags, 46 bls. linseys; ———, *Exmoor,* Istanbul, 295 bls. rags.

OLD ROPE

Chase National Bank, *American Merchant,* London, 48 coils; E. J. Keller Co. Inc., *American Merchant,* ———, 63 coils; W. Steck & Co., *Volendam,* Rotterdam, 48 coils; Banco Com'l Italiane Trust Co., *Cristobal,* Colon Pasages, 226 coils; Banco Com'l Italiane Trust Co., *Cristobal,* Colon Coruna, 31 bls.; Banco Com'l Italiane Trust Co., *Cristobal,* Colon Vigo, 29 bls.

CHINA CLAY

English China Clays Sales Corp., *Scythia,* Liverpool, 56 bags; ———, *Scythia,* Liverpool, 25 casks.

CASEIN

American British Chemical Supplies, *Black Hawk,* Antwerp, 212 bags; American British Chemical Supplies, *Champlain,* Havre, 286 bags; ———, *Champlain,* Havre, 287 bags; ———, *Western World,* Buenos Ayres, 118 bags.

WOOD PULP

Lagerloef Trading Co., *Sagoporack,* Kotka, 10 bls. sulphate 2 tons; M. Sone, *Alberta,* Trieste, 1031 bls. woodpulp; Perkins Goodwin & Co., *Stavangerfjord,* Drammen, 200 bls. sulphite; The Borregaard Co. Inc., *Stavangerfjord,* Sarpsborg, 1008 bls. sulphate.

WOOD PULP BOARDS

Jay Madden Corp., *Sagoporack,* Kotka, 108 rolls.

NEWARK IMPORTS

WEEK ENDING MAY 23, 1936

H. G. Craig Co. Inc., *Newscarrier,* Donnacona, 363 rolls, 17 pkgs. newsprint.

ALBANY IMPORTS

WEEK ENDING MAY 23, 1936

Halifax Power & Pulp Co. Ltd., *Solhavn,* Sheet Harbor, 7713 bls. ground pulp, 1722 tons.

BOSTON IMPORTS

WEEK ENDING MAY 23, 1936

Castle & Overton, Inc., *Collingsworth,* Buenos Ayres, 62 bls. rags; Paper Makers Chemical Corp., *Collingsworth,* Buenos Ayres, 417 bags casein 55144 lbs.; G. F. Malcolm, Inc., *Scythia,* Liverpool, 8 cs. tissue paper; Bulkley Dunton & Co., *Bockenheim,* ———, 210 bls. wood pulp.

PHILADELPHIA IMPORTS

WEEK ENDING MAY 23, 1936

———, *Artigas,* Dundee, 49 bls. paper stock; ———, *Artigas,* Hamburg, 25 rolls wrapping paper; J. W. Hampton Jr., Co., *Artigas,* Hamburg, 56 bls. paper; F. Weber Co., *Artigas,* London, 2 cs. cardboard; A. W. Fenton, Inc., *Artigas,* London, 130 bls. rags; ———, *Artigas,* London, 145 coils old rope; J. W. Hampton Jr., Co., *Sagoporack,* Kotka, 396 rolls newsprint; J. W. Hampton Jr., Co., *Sagoporack,* Kotka, 157 bls. printing paper; C. Palmer & Co., *Sagoporack,* Kotka, 105 bls. printing paper; Johaneson Wales & Sparre, Inc., *Sagoporack,* Gdynia, 1500 bls. wood pulp, 150 tons; Gottesman & Co. Inc., *Tai Yin,* Sweden, 2339 bls. wood pulp; E. J. Keller Co. Inc., *Indep. Hall,* ———, 20 bls. rags; E. J. Keller Co. Inc., *Edam,* ———, 139 bls. rags; E. J. Keller Co. Inc., *Black Heron,* ———, 1727 bls. rags.

BALTIMORE IMPORTS

WEEK ENDING MAY 23, 1936

Frazar & Co., *Kiyosumi Maru,* Yokohama, 141 bls. rags; National City Bank, *Artigas,* London, 121 bls. rags; Gottesman & Co. Inc., *Alberta,* Czecho-Slovakia, 2248 bls. wood pulp; Gottesman & Co. Inc., *Tai Yin,* Sweden, 3900 bls. wood pulp; Gottesman & Co. Inc., *Toronto,* Norway, 2400 bls. wood pulp; Bulkley Dunton & Co., *Black Falcon,* ———, 462 bls. wood pulp.

NEW ORLEANS IMPORTS

WEEK ENDING MAY 23, 1936

Darmstadt Scott & Courtney, *Kiyosumi Maru,* Kobe, 400 bls. bagging; Gottesman & Co. Inc., *Tortugas,* Finland, 600 bls. wood pulp.

MONTREAL IMPORTS

WEEK ENDING MAY 23, 1936

Gottesman & Co. Inc., *Norefjord,* Sweden, 300 bls. wood pulp.

ONTARIO ORDERS PAPER MACHINES

(Continued from page 13)

amounted to $2,269,449, as compared with $1,044,320 for the preceding year. This amount of $2,269,449 is shown applied toward depreciation, so that the deficit brought forward at $210,533 is the amount which is again shown carried forward.

A feature of the balance is a reduction of the bank loans under section 88 of the Bank Act from $4,557,000 to $2,741,000. No change is shown in the special bank loan of $8,309,725, which was incurred to pay obligations of predecessor companies. As a result of the above noted reduction, excess of current liabilities over current assets in the report being reviewed is shown at $4,871,837, as against an adverse working capital position of $6,605,302 at the end of the preceding year.

The Consolidated statements include the following wholly owned Subsidiary Companies: Anticosti Shipping Company, Ha! Ha! Bay Land & Building Company, St. Maurice Valley Paper Company, Limited and Wayagamack News Limited.

L. J. Belnap, the president, in reporting the above to the shareholders, says regarding the outlook: "The indications of price improvement which appeared in 1935, resulted in an increase for North American delivery of $1.00 per ton, effective January 1st, 1936. Even with increasing consumption of newsprint paper, and the strictest economy in operation, the present price is so low that no substantial benefit can accrue to the industry. Furthermore, taxes and other items of expense make increased costs inevitable."

Commenting on the statement, the *Montreal Gazette* says: "The company's bonds, which have been on an income basis since the re-organization, are due to become cumulative after July 2, 1936, with interest stipulated to be paid semi-annually after that date. It would appear apparent from the current report that a resumption of bond interest payments may be delayed for a while yet, but it may be assumed that with the indicated improvement in the company's operations, plus the definitely brighter outlook for newsprint in general, bondholders will be quite ready to grant the company a further delay."

New York Market Review

Office of the PAPER TRADE JOURNAL,
Wednesday, May 27, 1936.

Conditions in the local paper market are fairly satisfactory for the time of year. Demand for the various grades of paper is well up to average for the season. Sales forces of the leading paper organizations are confident of the future trend of the industry during the balance of the year. Prices are steady and unchanged.

The position of the newsprint paper market continues to improve. Newspaper advertising for the month of April showed an increase of 4.3 per cent. over the preceding month and 8 per cent. from April last year. Circulations of the leading newspapers, also, continue to grow. There is much talk around of higher prices in the near future.

Steadiness prevails in the fine paper market. Demand for book, cover, bond and ledger papers is moderately active. Prices are steady, in most instances. Tissues are moving into consumption freely. The coarse paper market is displaying strength. Demand for summer specialties is increasingly materially.

Mechanical Pulp

No radical changes transpired in the ground wood pulp market. Manufacturing operations in the United States, Canada and abroad are keyed to consumption as far as possible and the statistical position of the industry is considered sound. Prices of both domestic and imported mechanical pulp remain unchanged.

Chemical Pulp

The chemical pulp market continues to exhibit a strong undertone. Due to the scarcity of offerings of bleached sulphite pulp and kraft pulp there are more inquiries around for unbleached sulphite pulp, which is much stronger. Domestic and imported bleached sulphite pulp is still quoted at $2.60 to $3.10, on dock, Atlantic ports.

Old Rope and Bagging

Business in the old rope market continues slow. Paper mill demand for both domestic and foreign old manila rope is restricted. Mixed strings are only moderately active. The bagging market is quiet. Scrap and gunny bagging are rather listless at present. Bagging quotations are spotty and irregular.

Rags

The domestic rag market is easier. Demand for old and new cotton rags is light. While No. 1 white shirt cuttings are fairly steady the export movement is less in evidence. Roofing grades are moving slowly. The imported rag market is practically unchanged and prices are generally holding to formerly quoted levels.

Waste Paper

Board mill demand for the lower grades of paper stock is better than of late. Prices on strictly folded news and No. 1 mixed paper are holding up fairly well. The higher grades of waste paper are steady. Some export request for these grades appears to be developing. White envelope cuttings and hard and soft white shavings are steady.

Twine

Most of the business transacted in the local twine market during the past week was along routine lines. There are a number of inquiries around for future requirements, some of which should materialize into good orders. Prices are generally holding to previously quoted levels.

PHILADELPHIA OUTLOOK PROMISING

(Continued from page 22)

22—If owned by salesmen how is expense of operation handled?

23—Do you stand for socalled advertising in miscellaneous publications which are more on the complimentary side than actual advertising?

24—How do you handle advertising or publicity material supplied to you by various mills?

William A. Meeks Honored

In honor of his tenth anniversary as executive secretary for the Typothetae here in Philadelphia, William A. Meeks was today presented with a new style leather golf bag, on behalf of the members of the Fine Paper Division of the Philadelphia Paper Trade Association. Accompanying the golf bag was a letter over the signature of Ormond Freile, Vice President of the Fine Paper Division, containing sentiments which will long be treasured by Mr. Meeks.

U. G. Power Transmission Appliances

T. B. Wood Sons Company, with factory at Chambersburg, Pa. and offices at 307-391 Atlantic avenue, Boston and 50 Church street, New York, has just issued an interesting folder featuring its U. G. (Universal Giant) power transmission appliances. The Wood Company's line includes shafting, hangers, collars, pulleys, friction clutches, ball bearings, flexible couplings, rope sheaves, pillow blocks, belt contractors, "V" belts, "V" belt sheaves and complete "V" belt drives.

A copy of this folder may be had by writing to the T. B. Wood Sons Company at Chambersburg, Pa., or its Boston or New York offices and inquiring for Condensed Catalog No. 179.

Vol. III, Manufacture of Pulp and Paper Wanted

Volume III, "Manufacture of Pulp and Paper" is being revised and is temporarily out of print. Since there are a number of requests for this book for summer school use, anyone having a copy that he is willing to sell is urged to notify R. G. Macdonald, Secretary of TAPPI, 122 E. 42nd street, New York, quoting the price that will be acceptable.

Miscellaneous Markets

Office of the PAPER TRADE JOURNAL,
Wednesday, May 27, 1936.

BLANC FIXE—The position of the blanc fixe market is practically unchanged. Prices are generally holding to schedule. The pulp is quoted at $42.50 to $45 per ton, in bulk; while the powder is selling at 3½ to 3¾ cents per pound, in barrels, at works.

BLEACHING POWDER—Steadiness prevails in the bleaching powder market. The contract movement is normal for the season. Prices are well maintained and shading is infrequent. Bleaching powder is quoted at $2 to $2.25 per 100 pounds, in drums, at works.

CASEIN—The casein market is firmer. Domestic standard ground is quoted at 14½ and finely ground at 15; while Argentine and French standard ground are selling at 15¼ and finely ground at 16 cents per pound, all in bags, car lot quantities.

CAUSTIC SODA—Paper mill demand for caustic soda is fairly active. Contract shipments are moving in good volume. Solid caustic soda is quoted at $2.55 to $2.60; while the flake and ground are selling at $2.95 to $3 per 100 pounds, in drums, at works.

CHINA CLAY—The china clay market continues steady. Demand is fairly persistent. Prices remain unchanged. Imported china clay is quoted at $13.50 to $21 per ton, ship side; while domestic paper making clay is selling at $6.50 to $12 per ton, at mine.

CHLORINE—Supplies of chlorine are moving into consumption in good volume. Inquiries for future delivery are fairly numerous. Prices are holding to schedule without difficulty. Chlorine is quoted at $2.15 to $2.55 per 100 pounds, in tank cars, at works.

ROSIN—The rosin market is stronger. Paper making gum rosin is now quoted at $4.25 and wood rosin at $4.20 per 280 pounds, gross weight, in barrels, at Savannah. Seventy per cent rosin size is selling at $2.52½ per 100 pounds, in tank cars, at works.

SALT CAKE—Conditions in the salt cake market are satisfactory. Demand is holding up well. Prices continue firm. Salt cake is quoted at $12 to $13; chrome salt cake at $11 to $12 per ton, at works. Imported salt cake is selling at $12 to $13 per ton, at mine.

SODA ASH—The soda ash market is exhibiting a strong undertone. Shipments against contract are moving freely. Prices are firm. Quotations on soda ash, in car lots, at works, per 100 pounds, are as follows: in bulk, $1.05; in bags, $1.20; and in barrels, $1.50.

STARCH—Trading in the starch market is moderately active. The contract movement is seasonal. Prices are holding to schedule. Special paper making starch is quoted at $3.20 per 100 pounds, in bags; and at $3.47 per 100 pounds, in barrels, at works.

SULPHATE OF ALUMINA—The sulphate of alumina market is displaying strength. Demand from the paper mills is brisk. Prices remain unchanged. Commercial grades are quoted at $1.35 to $1.60; and iron free at $2 to $2.25 per 100 pounds, in bags, at works.

SULPHUR—The sulphur market is steady. Yearly contracts are quoted at $18 per ton, in bulk, on orders of 1,000 tons, or over, and $20 on smaller quantities. On spot and near by car loads the quotation is $21 per ton. All quotations are in car lots, at works.

TALC—Demand for talc from the paper mills is mainly routine. The contract movement is seasonal. Prices remain unchanged. Domestic talc is quoted at $16 to $18 per ton, at eastern mines; while imported talc is selling at $23 to $30 per ton, on dock.

Market Quotations

Paper

Rag Content Bond & Ledgers—Delivered Zone 1

	Bonds	Ledgers
100% Rag Ext. No. 1	.36	.37
100% Rag	.28	.29
75% Rag	.21	.22
65% Rag	.18	.19
50% Rag	.15	.16
25% Rag	.12½	.13½

Sulphite Bond & Ledgers—Delivered Zone 1

	Bonds	Ledgers
No. 1 Sulphite	7.75	8.75
No. 2 Sulphite	6.75	7.75
No. 3 Sulphite	6.00	7.00
No. 4 Sulphite	5.50	6.50

Book, Cased—

S. & S. C.	5.35 @	5.75
S. & S. C. Litho.	5.60 @	6.00
M. F.	5.10 @	5.50
Coated and Enamel	5.90 @	6.55
Coated Litho	5.90 @	6.55

Tissues—Per Ream—

White No. 1	.82½ @	—
White No. 1 M. G.	.77½ @	—
White No. 1½	.62½ @	—
White No. 2	.60 @	—
Anti-Tarnish M. G.	.67½ @	—
Colored	.80 @	—
Kraft	.67½ @	—
Manila	.60 @	—
Unbleached Toilet	2.60 @	3.30
Bleached Toilet	3.94 @	5.26

Paper Towels—

Unbleached	2.10 @	3.35
Bleached	3.30 @	3.70

Manila—

No. 1 Jute	9.00 @	9.25
No. 2 Jute	7.75 @	8.50
No. 1 Wood	4.00 @	5.25
No. 2 Wood	3.50 @	4.00

Fibre Papers—

No. 1 Fibre	4.25 @	5.50
No. 2 Fibre	4.00 @	4.75

(Delivered New York)

News, per ton—

Roll, contract	41.00 @	—
Sheets	46.00 @	—

Kraft—

No. 1 Northern	4.25 @	4.75
Standard	4.12½ @	—
Southern	4.00 @	—

Boards—per ton

News	32.50 @35.00
Chip	32.50 @35.00
Sgl. Mla. Lt. Chip	45.00 @47.50
Jute Lined Chip	42.50 @45.00
Kraft Liners	60.00 @62.50
White Pat. Coated	55.00 @57.50
Binders Boards	67.00 @75.00

Mechanical Pulp

(On Dock, Atlantic Ports)

No. 1 Imported—

Moist	23.00 @24.00
Dry	23.00 @24.00

(Delivered)

No. 1 Domestic and Canadian 27.00 @28.00

Chemical Pulp

(On Dock, Atlantic, Gulf and West Coast Ports)

Bleached Sulphite (Domestic and Foreign)—

Division 1	2.60 @	3.10
Division 2	2.55 @	2.65
Division 3	2.50 @	2.60

Prime Qualities—

Class 1. All Prime Easy Bleaching	2.05 @	2.10

Other Than Easy Bleaching—

Class 2. Higher than Standard	2.00 @	2.05
Class 3, Standard	1.95 @	2.00
Class 4, Lower than Standard	1.90 @	1.95

(On Dock, Atlantic Ports)

Kraft No. 1	1.85 @	2.00
Kraft No. 2	1.70 @	1.80

(F. o. b. Pulp Mill)

Kraft Domestic	1.80 @	1.90

(Delivered)

Soda Bleached	2.60 @	—

* Add 60 Cents per short ton, dock charges, for Albany; $2.00 for Lake Ports East and $3.00 for Lake Ports West of Mackinac Straits.

Domestic Rags

New Rags

(Prices to Mill f. o. b. N. Y.)

Shirt Cuttings—		
New White, No. 1	7.85 @	8.00
Silesias No. 1	5.50 @	5.75
New Unbleached	8.25 @	8.50
New Soft Blacks	3.75 @	4.00
Blue Overall	5.75 @	6.00
Fancy	3.25 @	3.50
Washables	2.25 @	2.50
Mixed Khaki Cuttings	3.50 @	3.75
O. D. Khaki Cuttings	4.25 @	4.50
Men's Corduroy	2.00 @	2.25
New Mixed Blacks	2.75 @	3.00

Old Rags

White, No. 1—		
Repacked	3.00 @	3.50
Miscellaneous	2.75 @	3.25
White, No. 2—		
Repacked	1.75 @	2.25
Miscellaneous	1.50 @	1.75
Thirds and Blues—		
Repacked	2.25 @	2.50
Miscellaneous	2.10 @	2.20
Roofing Rags—		
No. 1	1.80 @	1.85
No. 2	1.45 @	1.50
No. 3 (bagging)	1.35 @	1.40
No. 4	1.30 @	1.35
No. 5A	.90 @	1.00

Foreign Rags

New Rags

New Dark Cuttings	2.25 @	2.50
New Mixed Cuttings	2.00 @	2.25
New Light Silesias	4.50 @	5.00
Light Flannelettes	4.50 @	5.00
New White Cuttings	7.00 @	7.50
New Light Oxfords	4.00 @	4.50
New Light Prints	3.00 @	3.25

Old Rags

No. 1 White Linens	7.50 @	8.00
No. 2 White Linens	6.50 @	7.00
No. 3 White Linens	4.50 @	5.00
No. 4 White Linens	2.25 @	2.50
No. 1 White Cotton	4.25 @	4.75
No. 2 White Cotton	3.25 @	3.75
No. 3 White Cotton	2.50 @	2.75
No. 4 White Cotton	1.90 @	2.15
Extra Light Prints	2.00 @	2.25
Ord. Light Prints	1.75 @	1.85
Med. Light Prints	1.55 @	1.65
Dutch Blue Cottons	2.25 @	2.50
French Blue Linens	3.50 @	4.00
German Blue Linens	2.50 @	2.75
German Blue Cottons	2.00 @	2.25
Checks and Blues	2.00 @	2.25
Linsey Garments	2.50 @	2.60
Dark Cottons	2.00 @	2.35
Old Shopperies	1.75 @	2.00
New Shopperies	1.75 @	2.00
French Blues	2.25 @	2.50

Old Rope and Bagging

(Prices to Mill f. o. b. N. Y.)

Gunny No. 1—		
Foreign	2.10 @	2.15
Domestic	2.00 @	2.10
Wool Tares, light	1.50 @	1.75
Wool Tares, heavy	1.85 @	2.05
Bright Bagging	1.75 @	1.80
Manila Rope—		
Foreign	2.35 @	2.45
Domestic	2.25 @	2.35
Mixed Strings	1.10 @	1.15
New Burlap Cut	2.50 @	2.75
Hessian Jute Threads—		
Foreign	2.60 @	2.75
Domestic	2.80 @	3.00

Old Waste Papers

(F. o. b. New York)

Shavings—		
White Envelope Cuttings	2.55 @	2.65
Ordinary Hard White No. 1	2.25 @	2.35
Hard White No. 2	2.10 @	2.20
Soft White No. 1	2.05 @	2.15
Flat Stock—		
Stitchless	.65 @	.75
Over issue Mag	.65 @	.75
Solid Flat Book	.55 @	.60
Crumpled No. 1	.35 @	.40
Solid Book Ledger	1.50 @	1.65
Ledger Stock	.85 @	.90
New B. B. Chips	.30 @	.35
Manilas—		
New Env. Cut	1.75 @	1.85
New Cuttings	1.35 @	1.45
Bogus Wrapper	.40 @	.50
Old Kraft Machine—		
Compressed bales	1.25 @	1.35
News—		
No. 1 White News	1.30 @	1.40
Strictly Overissue	.50 @	.60
Strictly Folded	.32½ @	.37½
No. 1 Mixed Paper	.20 @	.25

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KALIX TRÄINDUSTRI AKTIEBOLAG
Vanaförden, Sweden
MUNKSUNDS AKTIEBOLAG
Munksund, Sweden
NIENSJÖ CELLULOSA A.-B.
Sprängsvikan, Sweden

Bleached Sulphite
KELLNER-PARTINGTON PAPER PULP CO., LTD.
Sarpsborg, Norway
Edsvalla, Sweden
Halleln & Villach, Austria

Unbleached Sulphite
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BERGVIK OCH ALA NYA AKTIEBOLAG
Söderhamn, Sweden
CELLULOSEFABRIKS A.-G.
Bratislava, Czecho-Slovakia
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Twines

(F. o. b. Mill)

(Soft Fibre)

Coarse Polished—			
India	.13¼	@	.15¼
Belg. White Hemp	.14½	@	.17¼
India Compress	.13¾	@	.14½
Fine Polished—			
Fine India	.21½	@	.23½
Special	.19½	@	.21½
Unpolished—			
Box	.12	@	.12½
Paper Makers	.09	@	.13½
Tube Rope	.10	@	.15½
Wall Paper	.11	@	.14½
Wrapping	.15½	@	.21
Special	.15	@	.15½
Soft Fiber Rope	.12½	@	.12¾

(Hard Fibre)

Bond	.12	@	.20½
Anchor	.11½	@	.13
Manila	.21	@	.2[illegible]

CHICAGO

Paper

(F. o. b. Mill)

Rag Bond	.12	@	.40
Water Marked Sulphite Bond	.06¾	@	.11
Sulphite Bond	.05½	@	.07¼
Superfine Writing	.18	@	.24
No. 1 M. F. Book	.06½	@	.07¼
No. 2 M. F. Book	.05¼	@	.06¾
No. 1 S.&S.C. Book	.06¾	@	.07¾
No. 2 S.&S.C. Book	.05¾	@	.06½
Coated Book	.07	@	.12
Coated Label	.07	@	.08½
No. 1 Manila	.04¼	@	.05¾
No. 1 Fibre	.04¾	@	.05¼
No. 2 Manila	.04¼	@	.04¾
Butcher's Manila	.03¾	@	.03¾
No. 1 Kraft	4.75	@	5.00
Southern Kraft	3.88	@	4.25
No. 2 Kraft	3.88	@	4.25
Wood Tag Boards	.04¼	@	.06¼
Sulphite Screenings	.03	@	.03¼
Manila Tissue	.05¾	@	.07
White Tissue	.07	@	.09

(Delivered Central Territory)

News, per ton—			
Rolls, contract	42.00	@	—
Sheets, open	47.00	@	—
Boards, per ton—			
Plain Chip	46.50	@	—
Solid News	50.00	@	—
Manila Lined Chip	55.00	@	—
Patent Coated	65.00	@	—
Container Lined—			
85 Test, per 1000 sq. ft.			1.70
100 Test, per 1000 sq. ft.			1.85

Old Papers

(F. o. b. Chicago)

Shavings—			
No. 1 White Envelope Cuttings	1.70	@	2.00
No. 1 Hard White	1.40	@	1.65
No. 1 Soft White	1.25	@	1.50
Ledger & Writings	.60	@	.70
Solid Books	.50	@	.60
Blanks	1.00	@	1.05
Krafts	.80	@	.90
New Kraft Cuts	1.20	@	1.30
Manila Env. Cuts	1.25	@	1.30
Ex. No. 1 Manila	.90	@	1.00
Print Manila	.40	@	.50
Overissue News	.40	@	.45
Old Newspapers—			
No. 1	.30	@	.35
No. 1 Mixed Paper	.25	@	.30
Roofing Stocks—			
No. 1	30.00	@	—
No. 2	28.00	@	—

PHILADELPHIA

Paper

Rag Content Bond & Ledgers—
Delivered Zone 1

	Bonds	Ledgers
100% Rag Ext. No. 1	.36	.37
100% Rag	.28	.29
75% Rag	.21	.22
65% Rag	.18	.19
50% Rag	.15	.16
25% Rag	.12½	.13½

Sulphite Bond & Ledgers—
Delivered Zone 1

	Bonds	Ledgers
No. 1 Sulphite	7.75	8.75
No. 2 Sulphite	6.75	7.75
No. 3 Sulphite	6.00	7.00
No. 4 Sulphite	5.50	6.50

F.o.b. Mill

Book, M. F.	5.00	@	—
Book, S. S. & C.	5.25	@	—
Book, Coated	6.15	@	—
Coated Lithograph	6.15	@	—
No. 1 Jute Manila	10.50	@	—
Manila Sul., No. 1	6.75	@	—
Manila No. 2	4.25	@	—
No. 1 Kraft	6.00	@	—
Southern Kraft	5.00	@	—
News Print Rolls	40.00	@	—
Straw Board	40.00	@	45.00
News Board	40.00	@	—
Chip Board	37.50	@	—
Wood Pulp Board	70.00	@	85.00
Binder Boards—			
No. 1, per ton	75.00	@	80.00
No. 2, per ton	70.00	@	75.00
Carload lots	65.00	@	70.00
Tarred Felts—			
Regular	52.25	@	54.25
Slaters (per roll)	.84	@	.94

Domestic Rags (New)

(Price to Mill, f. o. b. Phila.)

Shirt Cuttings—			
New White, No. 1	.08	@	.08½
New White, No. 2	.04½	@	.05
Light Silesias	.05½		—
Silesias, No. 1	.04½	@	.05
Black Silesias, soft	.03½	@	.04
New Unbleached	.06	@	—
Washable, No. 1	.02	@	.02½
Blue Overall	.06	@	.06½
Cottons—According to grades—			
Washable, No. 2	.02½	@	.04½
New Blue	.01¾	@	.02¼
Fancy	.03	@	—
New Black Soft	.04	@	.04½
New Light Seconds	.03½	@	.04
New Dark Seconds	1.75	@	2.00
Khaki Cuttings—			
No. 1 O. D.	.04	@	.04½
No. 2 Mixed	.03½	@	.04
Corduroy	.02	@	.02¼
New Canvas	.04	@	.04½
New Black Mixed	.02	@	.02¼

Domestic Rags (Old)

White No. 1—			
Repacked	4.00	@	4.50
Miscellaneous	3.00	@	3.50
Thirds and Blues—			
Miscellaneous	2.00	@	—
Repacked	2.25	@	2.50
Black Stockings (Export)	4.50	@	5.00
Roofing Stock—			
Foreign No. 1	2.20	@	2.25
Domestic No. 1	1.80	@	1.85
Domestic No. 2	1.60	@	1.65
Roofing bagging	1.30	@	—

Bagging

(F. o. b. Phila.)

Gunny, No. 1—			
Foreign	2.00	@	—
Domestic	2.25	@	—
Manila Rope	2.25	@	2.50
Sisal Rope	2.00	@	2.25
Mixed Rope	1.00	@	1.10
Scrap Burlaps—			
No. 1	2.00	@	2.50
No. 2	.90	@	1.00
Wool Tares, heavy	3.00	@	3.25
Mixed Strings	1.00	@	1.10
No. 1 New Light Burlap	3.00	@	3.50
New Burlap Cuttings	2.50	@	2.75

Old Papers

(F. o. b. Phila.)

Shavings—			
No. 1 Hard White	2.30	@	2.40
No. 2 Hard White	2.10	@	2.20
No. 1 Soft White	1.80	@	1.85
No. 2 Soft White	1.40	@	1.45
No. 1 Mixed	—	@	.85
Solid Ledger Stock	1.50	@	1.60
Ledger Stock, white	1.15	@	1.20
Ledger Stock, colored	.85	@	.90
No. 1 Books, heavy	.65	@	.70
Manila Cuttings	1.50	@	1.60
Print Manila	.50	@	.60
Container Manila	.50	@	.60
Kraft Paper	1.10	@	1.20
No. 1 Mixed Paper	.35	@	.40
Straw Board Chip	.40	@	—
Binders Board Chip	.40	@	—
Corrugated Board	.60	@	.65
Overissue News	.60	@	—
Old Newspapers	.40	@	—

BOSTON

Paper

Rag Content Bond & Ledgers—
Delivered Zone 1

	Bonds	Ledgers
100% Rag Ext. No. 1	.36	.37
100% Rag	.28	.29
75% Rag	.21	.22
65% Rag	.18	.19
50% Rag	.15	.16
25% Rag	.12½	.13½

Sulphite Bond & Ledgers—
Delivered Zone 1

	Bonds	Ledgers
No. 1 Sulphite	7.75	8.75
No. 2 Sulphite	6.75	7.75
No. 3 Sulphite	6.00	7.00
No. 4 Sulphite	5.50	6.50

F.o.b. Mill

Book, Super	.06	@	.09
Book, M. F.	.05½	@	.08½
Book, Coated	.08½	@	.18
Coated Litho	.09	@	.12
Jute Manila No. 1	.11	@	.13
Manila, Sul. No. 1	.04¾	@	.06½
Manila, Sul. No. 2	.03¾	@	.04½
No. 1 Kraft	.04¼	@	—
No. 2 Kraft	.04¼	@	—

(Delivered New England points)

Southern Kraft	.04	@	—
News Print Rolls	39.50	@	—
Straw Board, rolls	.009	—	@35.00
Filled News Board	40.00	@	45.00
Chip Board	37.50	@	40.00
Single Manila Lined Chip	47.50	@	52.50
Single White, Patent Coated News Board (Bender)	55.00	@	65.00
Wood Pulp Board	70.00	@	75.00
Binder Boards (Standard Grade)	67.00	@	75.00

Old Papers

(F. o. b. Boston)

Shavings—			
No. 1 Hard White	2.00	@	2.20
No. 1 Soft White	1.75	@	1.90
No. 2 Mixed	.75	@	.80
Solid Ledger Books	1.50	@	1.75
Overissue Ledger Stock	1.15	@	1.30
Mixed Ledgers	.85	@	.90
No. 1 Books, heavy	.60	@	.70
No. 1 Books, light	.50	@	.60
Crumpled Stitchless Book Stock	.50	@	.60
Manila Env. Cuttings	1.50	@	1.60
No. 1 Old Manila	.60	@	.65
White Blank News	1.20	@	1.25
No. 1 Kraft	1.10	@	1.15
Mixed Papers	.20	@	.25
Print Manila	.45	@	.47½
Container Manilas	.27½	@	—
Old Newspapers	.22½	@	.25
Overissue News	—	@	.40
Box Board Chips	—	@	.25
Corrugated Boxes	.35	@	.37½
Kraft corrugated boxes	.95	@	1.00
Screening Wrappers	.40	@	.45

Bagging

(F. o. b. Boston)

Manila Rope—			
Foreign	2.35	@	2.45
Domestic	2.25	@	2.35
Transmission Rope	1.30	@	1.40
Jute Rope	2.00	@	2.25
Jute Carpet Threads	1.00	@	1.10
Gunny No. 1—			
Foreign	1.90	@	2.00
Domestic	1.80	@	1.90
Bleachery Burlap	4.50	@	5.00
Scrap Burlap—			
Foreign	2.00	@	2.10
Domestic	1.75	@	1.85
Scrap Sisal	2.00	@	2.10
Scrap Sisal for Shredding	2.10	@	2.35
Wool Tares, heavy	2.10	@	2.15
New Burlap Cuttings	2.00	@	2.25
Australian Wool Pouches	2.30	@	2.60
Heavy Baling Bagging	1.95	@	2.00
Paper Mill Bagging	1.75	@	2.00
Bagging No. 2	1.25	@	1.50

Domestic Rags (New)

(F. o. b. Boston)

Shirt Cuttings—			
New Light Prints	.01¾	@	.02
New White No. 1	.07¾	@	.08
New White No. 2	.04	@	.04½
Silesias No. 1	.05	@	.05½
New Black Silesias	.03½	@	.04½
Soft Unbleached	.07¼	@	.07¾
Blue Cheviot	5.50	@	6.00
Fancy	.02½	@	.02¾
Washable	.0165	@	.0170
Cottons—According to grades—			
Blue Overalls	5.50	@	6.00
New Black, soft	.04	@	.04¾
Khaki Cuttings	.04	@	.04¾
O. D. Khaki	.03¾	@	.04¼
Corduroy	.01¾	@	.02
New Canvas	—	@	.05
B.V.D. Cuttings	—	@	.06¼

Domestic Rags (Old)

(F. o. b. Boston)

Canvas	.04½	@	—
White No. 1—			
Repacked	—	@	2.75
Miscellaneous	2.50	@	2.75
White No. 2—			
Repacked	1.90	@	2.00
Miscellaneous	2.00	@	2.25
Twos and Blues	1.75	@	2.25
Thirds and Blues—			
Repacked	1.37½	@	1.75
Miscellaneous	1.25	@	1.62½
Black Stockings	3.90	@	4.00
Roofing Stock—			
No. 1	1.90	@	2.05
No. 2	1.40	@	1.50
No. 3	1.30	@	1.40

Foreign Rags

(F. o. b. Boston)

Dark Cottons	1.70	@	1.80
New White Shirt Cuttings	6.50	@	6.75
Dutch Blues	2.25	@	2.50
New Checks & Blues	2.50	@	3.00
Old Fustians	1.90	@	2.00
Old Linsey Garments	2.10	@	2.25
New Silesias	4.75	@	5.25

TORONTO

Paper

(F. o. b. Mill)

Bond—			
No. 1 Sulphite	.11	@	—
No. 2 Sulphite	.08½	@	—
No. 1 Colored	.12	@	—
No. 2 Colored	.09	@	—
Ledgers			
Ledgers, No. 1	.34½	@	—
Ledgers, No. 2	.25½	@	—
Writing	.09	@	.09½
Book—			
No. 1 M. F. (Carloads)	6.50	@	—
No. 2 M. F. (Carloads)	6.00	@	—
No. 3 M. F. (Carloads)	6.00	@	—
No. 1 S. C. (Carloads)	7.00	@	—
No. 2 S. C. (Carloads)	6.50	@	—
No. 3 S. C. (Carloads)	6.50	@	—
No. 1 Coated and Litho	12.00	@	—
No. 2 Coated and Litho	10.50	@	—
No. 3 Coated and Litho	9.50	@	—
Coated tinted	13.00	@	—
Wrapping—delivered—			
Rag Brown	4.75	@	—
White Wrap	3.50	@	—
"B" Manila	4.80	@	—
No. 1 Manila	5.40	@	—
Fiber	5.40	@	—
Kraft, M. F.	5.90	@	—
Kraft, No. 2	5.40	@	—

(F. o. b. Cars Toronto)

News, per ton—			
Rolls (contract)	40.50	@	—
Sheets	45.00	@	—

Pulp

Ground wood	27.00	@	—
Unbleached Sulphite	42.00	@	—
Book (Class 1)	58.00	@	—
Writing (Class 2)	59.00	@	—
Select (Class 3)	60.00	@	—

Old Waste Paper

(In carload lots, f. o. b. Toronto)

Shavings—			
White Env. Cut	2.00	@	2.25
Soft White	1.60	@	1.90
White Blk. News	1.25	@	1.40
Book and Ledger—			
Flat Magazine and Book Stock (old)	.90	@	1.00
Light and Crumpled Book Stock	.80	@	.90
Ledgers and Writings	1.00	@	1.05
Manilas—			
New Manila Cut	1.25	@	1.40
Printed Manilas	.50	@	—
Kraft	1.00	@	1.60
News and Scrap—			
Strictly Overissue	.55	@	—
Strictly Folded	.50	@	—
No. 1 Mixed Paper	.40	@	—

Domestic Rags

(Price to mills, f. o. b. Toronto)

No. 1 White Shirt Cuttings	.07½	@	.07¾
Fancy Shirt Cuttings	.02¾	@	.03

PAPER TRADE JOURNAL

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SIXTY-FOURTH YEAR

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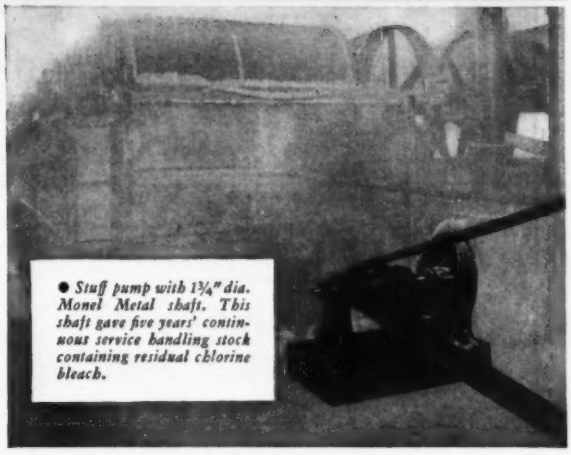

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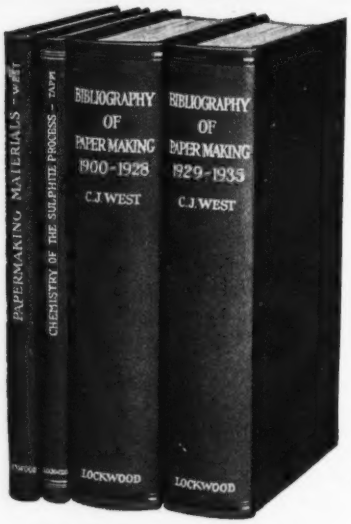
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